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**VOLUME I  
ANALYSIS OF QUEEN MARY/  
SPRUCE GOOSE COMPLEX**

**PREPARED FOR THE  
PORT OF LONG BEACH  
AND  
CITY OF LONG BEACH**

**PREPARED BY  
ECONOMICS RESEARCH ASSOCIATES  
IN ASSOCIATION WITH  
KOTIN, REGAN & MOUCHLY**

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## **Section I**

### **INTRODUCTION**

The Queen Mary/Spruce Goose complex is Long Beach's most prominent tourist attraction. During the first part of the 1980s the complex was operated by the Wrather Corporation. In 1988, the Walt Disney Company purchased Wrather and assumed the operating responsibilities for the property.

Disney's current lease with the City of Long Beach through its Board of Harbor Commissioners expires as of September 30, 1992. Disney has expressed their desire to discontinue operation of the complex at the termination of their contract, but has offered to remain in an operating capacity for a three-month period beginning October 1, 1992, and ending December 31, 1992. Recently, the Board of Harbor Commissioners elected to close the hotel portion of the operation at the end of September. The Port is currently negotiating with Disney to run the tour through the end of the year.

Economics Research Associates (ERA) and Kotin, Regan, & Mouchly (KRM), have been retained by the Port and City of Long Beach to examine the economic feasibility and impacts of potential uses for the complex, and to recommend an appropriate strategy for the Queen Mary complex and surrounding property. This report represents the conclusion of the Phase I work effort of the Consultant Team, which consisted of the economic analysis of the Queen Mary complex (this did not include analysis of the Londontown retail operation). The second phase of work will include recommendations and analyses of the surrounding Queensway Bay development area, and will be completed in September under subcontract to Ehrenkrantz and Eckstut Architects.

Our Phase I effort has been presented in several documents, including this three-volume final report, and an interim report which focuses on the hotel operation. These documents are listed below:



1. **Volume I — Final Report, Analysis of the Queen Mary/Spruce Goose Complex, dated July 1992.**
2. **Volume II — Research Appendix, Analysis of the Queen Mary/Spruce Goose Complex, dated July 1992.**
3. **Volume III — Cost and Engineering Study, Queen Mary/Spruce Goose Complex, dated July 1992.**
4. **Interim Report — Analysis of Hotel Queen Mary, dated June 1992.**

This first volume final report presents our findings, conclusions, and recommendations. For ease of reading, detailed research and analysis have been placed in the second and third volumes.

Following this Introduction, the first volume final report has been organized into the following sections:

- II. **Summary and Conclusions**
- III. **Methodology**
- IV. **Site and Facilities**
- V. **Available Markets**
- VI. **Historical Attraction Performance**
- VII. **Maintenance Costs**
- VIII. **Screening Analysis**
- IX. **Economic Analysis and Projections — Short-Listed Uses**
- X. **Financial Feasibility of Selected Uses**
- XI. **Economic Fiscal Impact**

The team of consultants included the following firms, with ERA as the prime contractor:

- **Economics Research Associates — Market and Economic Analysis, Project Management**
- **Kotin, Regan, & Mouchly — Financial, and Economic Impact Analysis**
- **Rados International Corporation — Cost and Engineering Analysis**

**Additionally, the following firms and individuals contributed their expertise in the selection and analysis of potential use options for the complex:**

- **Jani International**
- **Leisure Resources International**
- **Donald J. Hall**
- **Harrison Price Company**
- **The Port and City of Long Beach**

## **Section II**

### **SUMMARY AND CONCLUSIONS**

This section sets forth the conclusions of our findings and our recommendations. The supporting analysis, research, and documentation for these conclusions are located in the body of this report and in Volumes II and III.

#### **FACILITIES**

The Queen Mary/Spruce Goose complex is located on some 50 acres of property on Pier J within the Queensway Bay Planning District of the Port of Long Beach. The complex consists of the Queen Mary which includes: the 365-room Queen Mary Hotel with 70,000 square feet of meeting and exhibit space; approximately 8,000 square feet of retail space; four restaurants; and the Queen Mary Tour exhibit areas. The Queen Mary/Spruce Goose complex also includes the Spruce Goose facility, a domed attraction of approximately 60,000 square feet, and the Londontown retail facility.

#### **HISTORICAL PERFORMANCE**

The facility has been operated over the last 10 years by two companies: the Wrather Company and the Walt Disney Company. During the early 1980s, the facility experienced high levels of attendance due to the addition of the Spruce Goose attraction. During this period of time, the complex produced operating income before capital expenditures. This was primarily due to the addition of the Spruce Goose which temporarily boosted attendance, as well as strong attraction and hotel markets through the early and mid 80s. As the impact of the Spruce Goose waned, and the hotel market softened, performance of the facility declined. Additionally, after capital expenditures, the complex lost money in all but one year during the last 10 years. Historical operating income before and after capital expenditures is shown in the text table below, and is as reported to the City of Long Beach Auditors Office by attraction management.

<u>Year</u>	<u>Operating Income</u>	<u>Income After Capital Expenditures</u>
1982	(\$1,250 )	(\$ 5,020 )
1983	\$4,120	\$ 2,014
1984	\$7,524	(\$ 3,170 )
1985	\$6,438	(\$ 4,732 )
1986	\$5,500	(\$ 6,222 )
1987	\$4,506	(\$ 8,547 )
1988 <sup>1</sup>	\$ 624	(\$ 4,900 )
1989	\$2,145	(\$ 2,170 )
1990	(\$7,345 )	(\$10,811 )
1991	(\$4,153 )	(\$7,966 )

Disney began management of the attraction as the markets continued to soften. Under Disney management, attraction and hotel performance continued to decline. Operating income continued its downward trend, which began during the earlier years, and turned negative in 1990. Disney attempted to revive the attraction through heavy marketing, promotion, special events, and entertainment. However, these efforts produced few results. The project is currently suffering from serious operating deficits, still faces a weak market, and is in need of much costly repair.

It is the consultant team's opinion that the primary problem with the Queen Mary complex is not its management. The problem is the product and its markets. The attraction has lost money for nine of the last ten years under two operators. The attraction has inherently low visitation, is passive, has somewhat difficult access, is located on the waterfront so that it only has half a market geographically speaking, and is situated in one of the U.S.'s most competitive attraction markets. The hotel while upgraded by Disney, still has rooms half the size of hotels of similar price, and is facing a very over-built market with shrunken demand. Poor performance in the last several years has been exacerbated by the recession and weak attraction and hotel markets.

Balancing the facility's poor performance history has been the value of the facility to the City of Long Beach as an icon. The Queen Mary's image and presence is associated with

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<sup>1</sup> 1988-1991 fiscal year.

the City of Long Beach probably more than any other structure or activity. The Queen Mary is a high visibility tourist attraction, and serves as an amenity for visiting conventioners as well.

## MARKETS

The complex benefits from proximity to the greater Los Angeles/Orange County resident and tourist markets. These markets include approximately 11.3 million residents, and approximately 25 million overnight visitors per year. The more immediate Long Beach market includes some 430,000 residents, and annual tourism of approximately 2 million visitors. These residential and tourist markets represent strong markets for a variety of the uses being considered for the Queen Mary/Spruce Goose complex.

The Los Angeles area market is highly competitive for commercial recreation attractions. Additionally, the recession has dampened market demand for attractions over the last several years. The local hotel market is extremely weak currently due to decreased demand and an overbuilt inventory. These markets should experience a slow recovery over the next several years.

## MAINTENANCE COSTS

ERA's engineering consultant, Rados International Corporation, analyzed the present physical condition of the Queen Mary and provided estimates of the *minimum* required investment to bring the complex up to industry standards, and the annual cost to maintain the ship at that level. It is estimated that a total investment of approximately \$27 million will be required to bring the ship up to standards. This consists of items requiring immediate attention, totaling approximately \$6 million, and items requiring replacement or repair over the next three to five years consisting of \$21 million. The major expenses requiring maintenance on the ship include a dry docking inspection, asbestos abatement, deck replacement, HVAC system replacement, firemain replacement, and water-tight bulkhead replacement.

Once the ship is brought up to industry standards, annual maintenance is estimated to require a total of \$4.8 million. This assumes that the lower decks of the ship will be mothballed, and that the promenade sport and sun decks will remain operational.

## USE ANALYSIS AND OPERATING ECONOMIC PROJECTIONS

Over 60 potential uses and/or operating strategies were identified for the Queen Mary/Spruce Goose complex. These uses were screened by the consultant team and the Port and City of Long Beach to arrive at a short list of four potential new uses and four operating and/or disposition strategies.

The following objectives were determined for any use of the Queen Mary:

1. Minimize square footage and deck space used to reduce maintenance cost.
2. Use existing physical configuration as much as possible to reduce costly retrofitting requirements (including asbestos abatement, handicap access, material hauling costs, and others).
3. Maximize revenue through intensive, high earnings generating use of deck space.
4. Increase local market appeal to reduce dependance on tourists.
5. Maintain tour if possible.
6. Create nighttime as well as daytime use.
7. Maximize potential revenues to the City and Port.
8. Abide by various guidelines regulating use.

Based on these objectives and a matrix analysis of the uses, the short list is shown below with the feasibility of the various options.

<u>Use/Operating Strategy</u>	<u>Feasible</u>
1. Entertainment center--including dining entertainment, retail, and limited tour	Infeasible
2. Casino/card club	Feasible
3. Timeshare	Infeasible
4. Maritime museum with aquarium on-shore	Infeasible
5. Operation under current conditions	Infeasible
6. Partial operations	Infeasible
7. Mothball	Feasible
8. Disposition--sink, scrap, or sell	Feasible

Of the four new uses proposed, only one was determined to be feasible--the casino/card club. The consultant team thought it appropriate to include a moderate-scale card

club with the entertainment center as the most appropriate use for the Queen Mary. This option proved to generate annual revenues ranging from \$42 to \$75 million over a 10-year forecast period, and net operating income ranging from \$5.4 million to \$11.5 million over the same period.

The operating strategies considered, that is, operating under current conditions, or with a more limited operations, proved both to be infeasible. Our projections for the current operations options considered the following factors:

- A slowly recovering hotel market
- A slow economic recovery contributing to a more favorable attractions market
- Decreased operating expenses due to a lower level of business volume
- Operating efficiencies derived from a new operator managing the facility under industry standards (operating expenses were adjusted downward in the areas where Disney expenses were higher than industry standards)
- Continued, although slowed, attendance erosion due to lack of reinvestment and the passive nature of the attraction

Based on these and other factors, we have projected operating revenues under current conditions to range from some \$40 million in the initial year, expanding to \$47 million by Year 10. Overall, this represents a level slightly less than current revenues during the first year of the projection period increasing to historic average levels by about Year 5, and slightly surpassing historic levels by Year 10. Growth in revenues in real terms when accounting for inflation is actually negative, and reflects similar declines in real revenue growth of the Queen Mary/Spruce Goose complex under both Wrather and Disney management. Operating expenses have been projected to total some \$43 million in Year 1, expanding to \$59 million in Year 10. The expenses projected are somewhat lower than those during the recent years, reflecting the above noted efficiencies. Given the above revenue and expense projections, we have projected net operating income at -\$3.4 million in Year 1, declining to -\$10 million by Year 10. While these operating losses are not as extreme as in current years, reflecting recovery markets and more efficient operations, they are still losses and indicate the fundamental product and market problems with this complex.

The economic projections for the limited operation take into account the following factors:

- The tour will be considerably downscaled from its current level with only the top three decks available for viewing.
- Attendance erosion will continue due to lack of reinvestment in the attraction and the passive nature of the facility.
- Operating efficiencies will be experienced under new management, and considering lower business volumes.

Based on the above and other assumptions, gross revenues are projected at approximately \$13 million in the first year and at slightly under \$15 million by Year 10. Operating expenses, including cost of goods sold, are estimated at some \$23 million in Year 1, increasing to about \$30 million by the tenth year. The limited operations of the facility are projected to sustain operating losses of nearly \$10 million in the initial year and reaching \$15 million by Year 10. This option proves to be infeasible due to a lack of revenues necessary to support the high maintenance costs on the ship. Our analysis indicates that it is more economically advantageous to generate higher levels of revenues through more intensive use of the deck space rather than to limit the operations and attempt to contain expenses.

The non-operating and disposition options are all, in a sense, feasible. Mothballing the facility would cost approximately \$1.4 million, and while not generating any direct revenue, would have very limited annual maintenance expenses of roughly \$1 to \$2 million per year.

Sinking the vessel would cost approximately \$4.7 million, with some possible additional cost for asbestos abatement. Scraping the vessel would cost approximately \$7 to \$9 million due to the need for complete asbestos removal. Selling the vessel could generate revenues ranging from roughly \$4 to \$5 million (although the sale cost cannot be exactly determined). However, cost of this option would be approximately \$4 million due to the need for removal of some asbestos material and the breakwater to remove the ship.



## FINANCIAL FEASIBILITY

The financial feasibility of the options which produce operating income (Options 1 and 2), and the base case analysis, have been considered in light of the need for a land lease payment to the Port, and the need to support debt service for the required maintenance on the ship. Based on minimum Port market returns on industrial land, it is estimated that a \$2.3 million land lease payment would be appropriate for the various uses of the ship. When deducting this amount from net operating income, the base case analysis cannot support the debt and lease payment due to its high negative income. The entertainment center, Option 1, similarly, cannot pay a land lease to the Port and generate a positive return on investment. The entertainment center with the card club (Option 2) does provide sufficient income to support the debt necessary to finance the maintenance costs of the ship and to provide a reasonable return on equity of 21 percent (as measured by prefinancing internal rate of return).

The conclusion of the team's financial and economic feasibility analysis is that due to the extremely high maintenance costs required on the ship, the only use which produces a reasonable level of return is the entertainment center with the card club. It is very difficult for any operating facility to pay for such a high level of up-front capital expense which is not directly related to the appeal or market draw of the facility. While it is typical for land based attractions and real estate developments to pay for infrastructure improvements which may not be directly associated with market appeal and draw, these improvements typically account for a more moderate portion of overall investment. With the Queen Mary this is clearly not the case. The \$27 million maintenance requirement represents over 80 percent of the overall investment required to open the facilities being considered.

Obviously, to the extent the required maintenance costs can be amortized over a longer period of time the economics of the various uses will be improved. Similarly, a shorter term operation which would not need to undertake the full maintenance program would have a better economic outlook than a long-term operation required to pay for the full amount. Our economic projections assume a ten-year operating period with all of the maintenance costs paid for within a three-year period as specified by Rados International Corporation

## Economic Impact

The economic and fiscal impact of Options 1 and 2 and operating the ship under current conditions are shown in the text table below.

	<u>Base Case Current Operations</u>	<u>Option 1 Entertainment Center</u>	<u>Option 2 Entertainment Center and Card Club</u>
Expenditure Impacts (millions)	\$50.1	\$41.3	\$62.5
Employment Impacts	1,114 <sup>2</sup>	598 <sup>3</sup>	841 <sup>3</sup>
Fiscal Impacts (millions)	\$ 1.1	\$ 0.83	\$ 0.88

As indicated, operating the attraction under current conditions, while suffering from severe operating losses, does contribute significantly to spending and employment in the City of Long Beach. Total expenditure impacts are projected at \$50 million. Total employment impact is estimated at 1,100 jobs (includes part time and seasonal jobs), and total fiscal impact is projected at \$1.1 million. Option 1, the entertainment center, generates approximately \$41 million in expenditure impact, would have an employment impact of approximately 590 jobs (full time job equivalent), and a fiscal impact of approximately \$800,000. Option 2, the entertainment center/card club, generates the highest level of expenditure impact with an estimated \$63 million in direct and indirect expenditures in the City of Long Beach. This option would generate an estimated 841 jobs (full time equivalent), with a fiscal impact of approximately \$900,000.

## RECOMMENDATIONS

The Queen Mary has been an icon to the City of Long Beach for over 25 years. The facility has benefited the City as a focal point of tourism activity, and as a distinct part of the City's image and skyline. At the same time, the Queen Mary has suffered serious financial

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<sup>2</sup>Includes part time and seasonal.

<sup>3</sup>Full time equivalent.

losses under several management teams. Additionally, the ship is currently in need of very costly repairs. These repairs are difficult to support with all but a few operating options.

The consultant team has found that almost immeasurable subsidies will be required to operate the ship under its current conditions. Of over 60 alternative uses considered for the ship, only one use proved to generate sufficient revenue to support the high maintenance cost requirements of the ship.

In consideration of the icon value to the community, and the economic realities of the ship's operation, it is this consultant team's opinion that the entertainment center with the card club option be the only option considered for the long term operations of the ship. Otherwise, we would recommend the mothballing of the ship which would have a fairly limited cost, but would preserve the ship as an icon to the City for some years, until such a time that the deterioration of the ship requires scraping, or an opportune time arrives to sell the ship.

As the Phase II masterplanning process for the Queensway Bay area evolves, consideration of high income-generating surrounding land uses may make some of the infeasible options for the Queen Mary a possibility. To the extent land-based attractions can subsidize ship maintenance costs, shipboard activities will not have the same demands placed upon them in terms of income generation. It is unlikely, however, that any land-based facilities could contribute sufficient income to make the operation of the ship under current conditions a viable option.

## Section III

### METHODOLOGY

The Consultant Team worked closely with the Port and City of Long Beach in our analysis, and with the Port and City solicited and reviewed input from the public. Our basic methodology is set forth in Figure III-1.

As indicated there are three primary options for the complex:

1. Operate under current or improved current conditions
2. Mothball, remove or sell the facilities
3. Modify the use

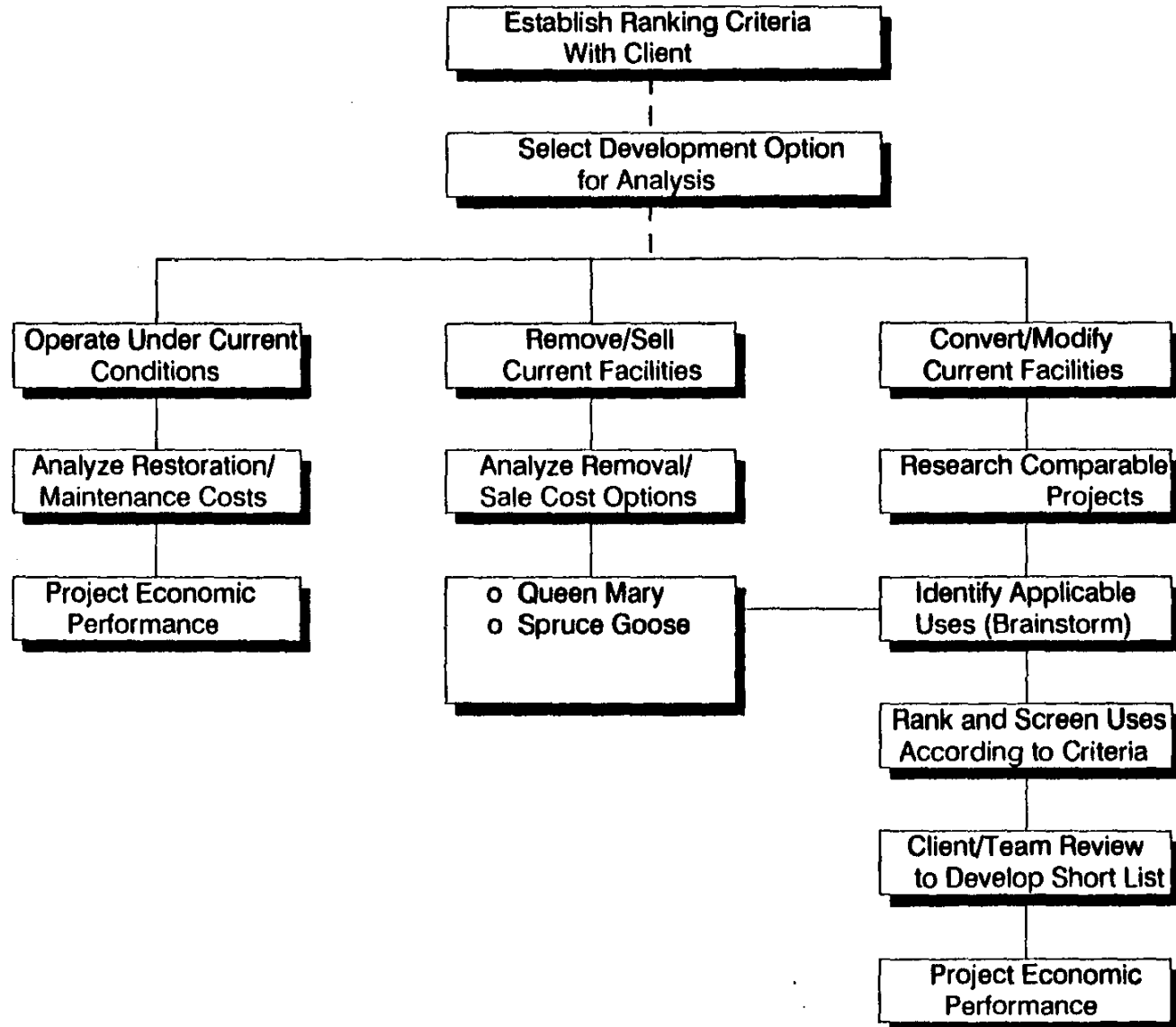
The Team analyzed the economic implications of all three of these potential strategies. For strategies one and three, our methodology included a review of historical performance, market analysis, projection of operating economics, analysis of ship maintenance needs and costs, financial performance projections, and economic impact analysis. For strategy two we evaluated the costs and benefits associated with the various disposition options. While analysis of the first and second strategy consisted of looking at only several options, the evaluation of the third strategy required a more in-depth analytical effort.

For the third strategy, modifying the facility's use, the Team's first step was to identify the potential uses for the complex. This consisted of three substeps. First, ideas were solicited from the community, and unsolicited proposals previously submitted to the Port and City were reviewed. Second, the consultant team met to "brainstorm" potential uses. Finally, ERA and the Port and City had a second "brainstorm" session to further identify and screen potential uses. This process resulted in the identification of over 60 potential uses and/or operating strategies for the complex.

The second major step for the third strategy was to screen the 60 uses and to identify a short list of uses which showed the highest potential. To accomplish this task,

Figure III-1

QUEEN MARY/SPRUCE GOOSE ANALYSIS METHODOLOGY



ERA developed a matrix analysis which evaluated the various uses taking into account various economic, physical, operating, regulatory, and other factors. Our matrix analysis ranked the proposed uses. The top 15 uses were then reviewed and analyzed by ERA and the Port and City of Long Beach. ERA and the Port and City then jointly designated a short list of uses to be studied further. The short list consisted of four new uses and one new operating strategy. These short-listed uses were then evaluated relative to their economic feasibility.

## **Section IV**

### **SITE AND FACILITIES**

The Queen Mary/Spruce Goose Complex is located on some 50 acres on Pier J within the Queensway Bay Planning District of the Port of Long Beach.

The Queen Mary measures 1,019 feet in length with a gross tonnage of 81,237. It contains 12 decks. It includes exhibit/tour areas, a hotel, restaurants and retail shops. The attraction also presently includes the Spruce Goose. Main Street of Londontown is located at the entrance to the attraction and has limited food and merchandise outlets.

#### **TOUR/EXHIBIT AREAS**

The three top decks, The Promenade Deck, Sun Deck and Sports Deck are open for visitors as well as specific working areas below. (The Main, A and B decks house the hotel.) The Promenade Deck includes the main public areas, Piccadilly Circus retail shops, the Wedding Chapel, Royal Salon, Queen's Salon, The Chelsea cafe, Observation Bar, and Promenade Cafe.

The ship's visitor areas and exhibits include:

- Engine Room
- Royal Theater
- Bow
- Stateroom Exhibits
- Fire Station
- Officers Quarters
- Bridge and Wheelhouse
- World War II Display
- Dining Room Exhibits
- Passenger Services Exhibits

## **HOTEL QUEEN MARY**

The Hotel Queen Mary's 365 rooms are located on three decks of the ship, the Main, A and B Decks and primarily within the former first-class area. Some of the cabins in the first-class area were enlarged by combining two adjoining rooms, while rooms in the former second-class areas were created by combining two to three original cabins.

The hotel rooms on the Queen Mary are in a variety of configurations and are smaller than typical hotel rooms. The small rooms on the Queen Mary contain approximately 200 square feet and the larger ones about 315 square feet. There are also five suites. Standard high-quality hotel rooms contain approximately 350 to 400 square feet.

Amenities to the hotel include the Sun Deck exercise room which is exclusively for hotel guests and three restaurants (which are open to the general public) — Sir Winston's, The Chelsea and the Promenade Cafe. Hotel guests currently pay reduced admission charges (half the adult price) for the Queen Mary/Spruce Goose tours.

## **BANQUET/MEETING SPACE**

Banquet and meeting space is located on the Promenade Deck, Main Deck, and B, D, E, F and R decks. There are 15 function rooms with 28,350 square feet of meeting space on the Queen Mary, and 45,000 square feet of exhibit space. Meeting rooms range in size from 310 to 9,000 square feet. Seating capacities range from 25 to 600 theater-style. The largest meeting rooms are the Grand Salon on the R deck, the Britannia Salon on the main deck, and the Queen's Salon on the Promenade deck. There are three exhibit halls on the Queen Mary which are 12,000, 18,000, and 15,000 square feet on the D, E, and F decks. Further, the Spruce Goose Dome contains 60,000 square feet of exhibit space.

## **RESTAURANTS**

There are three full-service restaurants on the ship. These are the formal Sir Winston's located on the Sports Deck which offers continental cuisine, the semiformal Chelsea Cafe and



the casual Promenade Cafe. The Observation Bar is located on the Promenade Deck. The Grand Salon, which was the original First Class dining room, is the site of a Sunday Champagne Branch.

Her Majesty's Sweet Shoppe on the Promenade Deck offers baked goods, coffees and candy. There is a snack shop and an ice cream stand on the Sun Deck which are open on a seasonal basis and the Verandah Grill on Promenade Deck which features fast food items.

## **RETAIL**

The Promenade Deck includes a collection of retail shops, the "Piccadilly Circus Shops."

These are:

- House of Heraldry — family coats-of-arms
- Bit of Britain — gifts, clothing
- Royal Crystal Arts — crystal items
- Press Museum — newspapers
- Crown Jewelry — fine jewelry
- Schilling Saver

Estimated total current retail space is about 8,000 to 9,000 square feet.

## **SPRUCE GOOSE**

The Spruce Goose is displayed under a clear-span aluminum dome. The dome contains roughly 60,000 square feet of exhibit space. The attraction includes the Kodak Theater and a small amount of merchandise and food and beverage space.

## **Section V**

### **AVAILABLE MARKETS**

The following paragraphs provide a brief overview of the City of Long Beach and its resident and visitor markets. The definition of available markets differ according to the specific use being considered. We have delineated appropriate market areas for each specific use deemed fit to warrant analysis and these are discussed in detail in Section IX.

#### **LONG BEACH OVERVIEW**

The City of Long Beach is located in the southern coastal portion of Los Angeles County, approximately 22 miles south of downtown Los Angeles. It comprises 50 square miles. As of the 1990 Census, Long Beach residents numbered some 429,400, with the City having the fifth largest population in the State. The Port of Long Beach is the busiest port on the west coast in terms of tons of cargo handled. The City is well located with respect to regional freeway access and is linked by light rail to downtown Los Angeles by the Los Angeles Metro Blue Line. The City's airport, Long Beach Municipal Airport, is served by three scheduled air carriers.

#### **AVAILABLE RESIDENT MARKET**

The Queen Mary complex is located within a large dense resident market which includes approximately 11.3 million persons living within the Greater Los Angeles and Orange County region. This includes some 429,400 local Long Beach residents.

Median age of the Los Angeles/Orange County area is 30.8 years which is slightly younger than that of the State as a whole (31.5). The average household size is 2.9. Detailed statistics relating to age and income characteristics of the Los Angeles/Orange County and Long Beach area populations are found in the Appendix tables.

## AVAILABLE VISITOR MARKET

Over the last two years, Long Beach has attracted an average of approximately 1.9 million overnight visitors per year and between 850,000 and 900,000 day visitors, as shown below:

Overnight Visitors	
Hotel/Motel	744,000
Household	1,158,000
Camping	<u>13,000</u>
Subtotal	1,915,000
Day Visitors	<u>857,000</u>
Total	2,772,000

The Long Beach visitor market is a subset of the Los Angeles region's visitor market which receives a total of approximately 25 million overnight visitors a year.

Included within the hotel/motel visitor category are over 300,000 convention delegates. The Long Beach Convention and Visitors Council (LBCVC) is responsible for convention sales bookings which include blocks of hotel rooms. Hotel roomnights booked by the LBCVC have grown from just over one thousand in 1982 to 132,000 in 1992. A 198,000-square-foot expansion to the Long Beach Convention Center is currently under construction and slated for completion by summer of 1994. The new convention center will contain 334,000 square feet of space including 224,000 square feet of exhibit space, 63,000 square feet of meeting rooms and a 21,000-square-foot ballroom. The expanded convention center will allow Long Beach to be more competitive in the group meetings market. Detailed Long Beach and Los Angeles area tourist data are in the Appendix.

### Hotel Industry Trends

There are a total of 4,700 hotel rooms in 17 properties containing 100 or more rooms in Long Beach. Occupancy rates have been declining in recent years and were 68 percent in 1991, and estimated by Pannell Kerr Forster at 62 percent for 1992 year to date.

The poor performance of the Long Beach hotel market reflects business cutbacks, flat demand and oversupply. The City has been impacted by cutbacks and concerns over the financial health of McDonnell Douglas and by United Airlines leaving Long Beach Airport. In addition, the Long Beach Hilton at the World Trade Center opened in January 1992 and added 393 rooms to the hotel room inventory in an already weak market. Demand has been weak in the Long Beach market and overall in the Los Angeles regional market due to the recession which has led to a decline in both the group meetings travel market segment and in pleasure travel. Detailed hotel industry statistics are shown in the appendix and discussed in our interim report.

Adding to the already ailing hotel market in the Greater Los Angeles Region is the negative impact arising from the this spring's civil disturbance. These events were widely publicized in the media are expected to impact the level of tourism to the region for some time. Clearly, the effects are already being felt in the visitor industry, with the hotel segment among those to feel the impacts first. In a recent study for the Los Angeles Visitors and Convention Bureau, ERA projected that hotel occupancies would be significantly impacted.

ERA's analysis indicated that international tourism will be most heavily affected, with declines of about 30 percent during this summer. Over the longer term, international tourism is projected to be off by 15 percent. While domestic tourism (which includes business travel) is forecasted to decrease less severely, declines of at least 15 percent during this summer and 5 to 10 percent over the long term are expected. These declines in the level of tourism are forecasted to lead to declines in hotel occupancy rates of approximately 12 percentage points during this summer and 5 percent in the longer term for the overall Los Angeles region.

## **Section VI**

### **HISTORICAL ATTRACTION PERFORMANCE**

This section of the report reviews the historical operating and financial performance of the Queen Mary/Spruce Goose attraction. In addition, the underlying reasons for its basically poor performance over the course of its history as an attraction in Long Beach are also discussed.

#### **ATTRACTION ATTENDANCE**

Attendance peaked in 1984 at 1.6 million, a reflection of the first full year with the Spruce Goose on site and the strong attractions market in general during the 1980s. As shown in Table VI-1, attendance has been eroding since 1984 at a compounded average rate of approximately 9 percent per year, while during much of this time the attractions industry was showing attendance gains generally ranging from 5 to 6 percent per year. The Queen Mary/Spruce Goose attraction has registered an attendance gain in only one year since 1984. In 1989, attendance increased 1 percent over 1988. It may be relevant that admission prices were not increased in 1989.

The Queen Mary/Spruce Goose complex is experiencing a common phenomena in the attractions industry: attendance erosion. Attractions require a steady annual reinvestment program to create repeat visitation. This is particularly true of attractions with a passive nature or those which can not rely strictly on tourists. The Queen Mary/Spruce Goose complex falls into both of these categories, and without major reinvestment, attendance at this facility will continue its downward trend.

#### **ATTRACTION PRICING**

Admission prices have increased substantially during the last decade, as indicated in Table VI-2. In 1981, adult admission was \$6.00. By 1986 it had more than doubled, and

in 1992 it reached \$17.95. Queen Mary/Spruce Goose price increases have averaged nearly 9 percent on a compounded annual basis since 1984. An adult admission price of \$17.95 is extremely high compared to other attractions with similar lengths of stay. For shorter length-of-stay commercial facilities (it is estimated that the length of stay at the Queen Mary complex is 2 to 3 hours) adult admission price usually ranges from \$7.00 to \$13.00.

### PER CAPITA EXPENDITURES

ERA analyzed per capita spending by category over a 10-year period and during the last 4 years under Disney operations. In order to allow for meaningful comparisons in spending at the attraction over different time periods, per capita expenditures for admissions, food and beverage and merchandise were adjusted using the consumer price index. Unadjusted and CPI adjusted per capita expenditures are shown in Table VI-3 and discussed below.

Admissions per capita expenditures have increased 8 percent per year since 1984 (average annual compounded rate) and a little less than 3 percent per year over the last 4 years, reflecting recessionary impacts. When adjusted for inflation, admissions per capita increased by about 3 percent per year from 1984 to 1991 and actually decreased by about 2 percent per year since 1988.

Spending in the food and beverage category registered average annual gains of 11 percent from 1984 to 1991, or roughly 6 percent per year when adjusted for inflation. During the last four years of operation, increases in food and beverage spending have dropped to a rate of just under 2 percent per year. When adjusted for inflation, spending in this category has actually shown no growth, but instead has declined by 3 percent a year since 1988. Similarly, merchandise spending grew at an average annual rate of 9 percent over the seven-year period (pre-inflation), but dropped to 2 percent a year since 1988. When inflation is taken into consideration, merchandise spending has decreased by about 2 percent per year since 1988. The decline in spending can be partially attributed to the recession and its impact on discretionary spending.

## HOTEL QUEEN MARY

In ERA's interim report the Hotel Queen Mary was addressed in detail. The hotel's historical performance is reviewed here. For the detailed analysis refer to the interim report.

Historical occupancies are shown in Table VI-4. As indicated, the occupancy level increased from a low of 47 percent in 1981 to a high of 76 percent achieved in 1985 and 1986. Occupancies have dropped since 1986, but stayed above 70 percent through 1988. Occupancies have declined sharply since 1988, dropping to 60 percent in 1991. This primarily attests to a very poor market and a lower quality product, rather than to any management deficiencies. As discussed in the Available Market section of this report, the Southern California hotel industry has been performing poorly in terms of occupancies in the last few years due to economic recession, tourism declines and excess inventory in many areas. Occupancy rates have been declining in recent years in Long Beach also, and the poor performance of the Long Beach hotel market reflects business cutbacks, flat demand and oversupply. Demand has been weak in the Long Beach market and overall in the Los Angeles regional market due to the recession which has led to a decline in both the group meetings travel market segment and in pleasure travel. In addition, the small sizes of the rooms put the Queen Mary at a disadvantage in a market which has become extremely competitive and has seen the addition of nearly 1,600 rooms over the last six years. Detailed hotel information is shown in the Appendix.

## FINANCIAL PERFORMANCE

ERA reviewed the financial performance of the attraction from 1982 through fiscal 1991. The Wrather Corporation operated the attraction from 1981 to 1988. The Walt Disney Company acquired the assets of Wrather Corporation, which included the lease to operate the attraction, and began operating the Queen Mary/Spruce Goose attraction in February of 1988.

ERA examined annual financial statements from 1982 through 1991 and discussed financial performance with Wrather and Disney executives. This included a review of detailed information by department which was supplied to us by Disney on a confidential

basis. While some of this information therefore cannot be disclosed, we were able to analyze and draw conclusions from it. Our analysis of revenues, expenses and operating income are discussed in detail below and a summary income and expense statement from 1982 through 1991 is provided in Table VI-5.

### Revenues

Gross revenues have been essentially flat since 1985 and have remained at a level of approximately \$43 million. Gross revenues grew from \$19 million in 1982 to \$41 million in 1984 and have generally stayed at the \$42 or \$43 million level since 1985. The strong growth during the early 1980s again reflects the addition of the Spruce Goose and its impact on attendance. A strong attractions market environment was also a contributing factor. When adjusted for inflation, revenues steadily declined during the post-Spruce Goose period, under both Wrather and Disney management.

### Expenses

Expenses have remained fairly constant from 1985 through 1989. In 1990 operating expenses increased substantially, by over 25 percent. This was mainly due to increased expenditures for entertainment and sales and marketing and clearly represents a strong attempt by Disney to bring the attraction up to their high standards and increase attendance. Marketing costs were about \$5 million, or approximately 12 percent of gross revenues in 1991, compared to the more typical 6 to 9 percent in the theme park industry and 5 to 7 percent in the hospitality industry. Entertainment expenses were approximately \$4 million for the same year, which is a significant increase over entertainment expenses in the 1980s. However, the increase in marketing and entertainment costs did not positively impact attendance. Given Disney's successful history of attraction marketing, this is an indication of the fundamental product and market difficulties of the Queen Mary/Spruce Goose complex. These difficulties include low repeatability, passive entertainment, and an intensely competitive attractions market. It should be noted, however, that while Disney provided



financial support, it did not promote the Queen Mary/Spruce Goose complex as a Disney attraction. Clearly, there is significant value attached to the Disney name, but this value was largely unrealized in the case of the Queen Mary/Spruce Goose.

### Net Income

We have reviewed operating income both before and after deducting for capital expenditures. These are discussed separately here.

### Net Operating Income

Net income from operations was positive from 1983 through 1989, although it declined steadily from 1984 to the present time. Net operating income is expressed before depreciation interest and taxes. Operating losses of approximately \$7 million were sustained in 1990 and \$4 million in 1991, as shown in the text table below and in Table VI-5.

<u>Year</u>	<u>Operating Income (000)</u>	<u>Income After Capital Expenditures (000)</u>
1982	(\$1,250)	(\$ 5,020)
1983	\$4,120	\$ 2,014
1984	\$7,524	(\$ 3,170)
1985	\$6,438	(\$ 4,732)
1986	\$5,500	(\$ 6,222)
1987	\$4,506	(\$ 8,547)
1988	\$ 624	(\$ 4,900)
1989	\$2,145	(\$ 2,170)
1990	(\$7,345)	(\$10,811)
1991	(\$4,153)	(\$ 7,966)

Note: All income figures are as reported to the City of Long Beach auditors office by Wrather and Disney management.)

### Income After Capital Expense Deduction

When capital expenses are deducted from operating income, all years with the exception of 1983 showed a loss as indicated in the text table. Clearly, the complex has suffered serious operating losses over the last 10 years under both Wrather and Disney management.

### SUMMARY

The declining pattern of attendance and overall downward financial trends discussed above demonstrate the inherent limitations in the attraction product itself. Static attractions like the Queen Mary/Spruce Goose which do not actively engage the visitor, characteristically produce a short length of stay and do not generate repeat visitation. These are inherent to the product, rather than being attributable to the ability of the operator. The addition of the Spruce Goose in 1984 temporarily had a positive impact on attendance. However, as soon as the novelty wore off, attendance began its steady decline. In recent years this pattern has been exacerbated by the recession and weak markets.

The hotel performance is clearly dependent to a great extent on general market conditions. When the market was strong, it performed fairly well in terms of occupancies. In recent years, the market has been very soft, there has been more competition, and the hotel operation has suffered.

Balancing these factors is the fact that the Queen Mary represents an icon to the City of Long Beach. While it is difficult, if not impossible to measure this value in quantitative terms, the Queen Mary's image and presence is associated with the city probably more than any other structure or activity. In interviewing tourism officials, it is clear that the Queen Mary has the highest visibility in terms of tourist attractions and plays a role (how large is unknown) in the decision-making process of conventions coming to the city. While the attraction's historical performance has been a financial drain, it is important to consider its "icon value" when making any decisions relative to its future.

**Table VI-1**  
**QUEEN MARY/SPRUCE GOOSE**  
**HISTORICAL ATTENDANCE**  
**1981-1991<sup>1</sup>**

<u>Year</u>	<u>Annual Attendance (000)</u>	<u>Percent Change</u>
1981	500	---
1982	540	8%
1983	1,400	159
1984	1,606	15
1985	1,292	(19)
1986	1,077	(17)
1987	1,014	(6)
1988	885	(13)
1989	898	1
1990	876	(2)
1991	808	(8)
 <u>Average Annual Compounded Rate</u>		
1984-1991		(9%)

<sup>1</sup>1988-1991 Disney fiscal year.

Source: The Walt Disney Company, Port of Long Beach, and  
Economics Research Associates.

Table VI-2

QUEEN MARY/SPRUCE GOOSE  
HISTORICAL PRICING

<u>Year</u>	<u>Adult Admission</u>	<u>Percent Change</u>
1981	\$ 6.00	—
1982	6.00	0%
1983	7.00	17
1984	8.70	24
1985	10.95	26
1986	13.95	27
1987	14.50	4
1988	14.95	3
1989	14.95	0
1990	17.50	17
1991	17.50	0
1992	17.95	2
 <u>Average Annual Compounded Rate</u>		
1981-1992		9%

<sup>1</sup>1988-1991 Disney fiscal year.

Source: The Walt Disney Company, Port of Long Beach, and  
Economics Research Associates.

Table VI-3

**QUEEN MARY/SPRUCE GOOSE  
PER CAPITA EXPENDITURES**

<u>Year</u>	<u>Admissions</u>	<u>CPI Adjusted</u>	<u>Food and Beverage</u>	<u>CPI Adjusted</u>	<u>Merchandise</u>	<u>CPI Adjusted</u>	<u>Other</u>	<u>CPI Adjusted</u>
1982	\$ 6.03	\$ 8.76	\$16.80	\$24.41	\$1.57	\$2.28	\$2.14	\$3.11
1983	3.05	4.35	9.29	13.27	1.99	2.84	1.48	2.11
1984	7.59	10.36	9.51	12.98	2.30	3.14	1.49	2.03
1985	9.21	12.02	12.45	16.25	3.06	3.99	2.18	2.84
1986	11.16	14.11	15.60	19.72	3.56	4.50	2.81	3.55
1987	11.52	13.97	16.30	19.76	3.81	4.62	3.23	3.91
1988	12.03	13.94	18.98	22.00	3.97	4.60	3.27	3.79
1989	11.29	12.45	20.26	22.35	4.36	4.81	3.70	4.08
1990	12.86	13.39	19.54	20.34	4.85	5.05	4.74	4.93
1991	13.04	13.04	19.92	19.92	4.27	4.27	6.22	6.22
 <u>Compounded Annual Growth Rate</u>								
1984-1991	8%	3.3%	11.0%	6.3%	9.0%	4.5%	22.6%	17.3%
1988-1991	2.7%	(2.2%)	1.6%	(3.2%)	2.0%	(2.4%)	23.9%	17.9%

Source: The Port of Long Beach, The Walt Disney Company, and Economics Research Associates.

Table VI-4

**HOTEL QUEEN MARY<sup>1</sup>  
HISTORICAL OCCUPANCY  
1981-1991**

<u>Year</u>	<u>Hotel Queen Mary<sup>2</sup></u>	<u>Long Beach Competitive Hotels</u>
1981	47%	--
1982	57	--
1983	65	--
1984	69	--
1985	76	--
1986	76	--
1987	72	70%
1988	74	70
1989	69	71
1990	67	69
1991	60	68
1992 (year to date)	n.a.	62

n.a. means not available.

<sup>1</sup>365 rooms.

<sup>2</sup>1988-1991 Disney fiscal year.

Source: The Walt Disney Company; Port of Long Beach; Pannell Kerr Forster;  
and Economics Research Associates.

Table VI-5

## SUMMARY OF REVENUES AND EXPENSES

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988fy</u>	<u>1989fy</u>	<u>1990fy</u>	<u>1991fy</u>
<b>REVENUE</b>										
Room Rentals	\$4,680	\$5,765	\$7,472	\$7,990	\$8,138	\$7,881	\$7,506	\$7,425	\$7,265	\$6,999
Food & Beverage	9,072	13,008	15,275	16,086	16,807	16,533	16,329	18,192	17,115	16,096
Merchandise	849	2,799	3,695	3,960	3,800	3,868	3,569	3,917	4,253	3,453
Tour Admissions	3,259	4,272	12,183	11,897	12,017	11,679	10,768	10,141	11,261	10,539
Other	<u>1,154</u>	<u>2,066</u>	<u>2,392</u>	<u>2,820</u>	<u>3,027</u>	<u>3,271</u>	<u>2,894</u>	<u>3,321</u>	<u>4,149</u>	<u>5,030</u>
Total Revenue	\$19,014	\$27,910	\$41,017	\$42,753	\$43,789	\$43,232	\$41,066	\$42,996	\$44,043	\$42,117
<b>OPERATING EXPENSES</b>										
<u>Cost of Goods</u>										
Food & Beverage	\$2,804	\$3,923	\$4,506	\$4,570	\$4,772	\$4,666	4,522	5,233	4,761	4,377
Merchandise	\$458	\$1,199	\$1,688	\$1,658	\$1,584	\$1,644	\$2,109	\$1,506	\$1,933	\$2,154
Autos										<u>\$465</u>
Total Cost of Goods	\$3,262	\$5,122	\$6,194	\$6,228	\$6,356	\$6,310	\$6,631	\$6,739	\$6,694	\$6,996
Labor	\$10,461	\$11,686	\$15,551	\$16,619	\$17,444	\$18,520	\$10,541	\$11,028	\$11,831	\$11,114
Other Expenses	6541	6982	11748	13468	14489	13896	\$23,270	\$23,084	\$32,863	\$28,160
<b>TOTAL OPERATING EXPENSES</b>	\$20,264	\$23,790	\$33,493	\$36,315	\$38,289	\$38,726	\$40,442	\$40,851	\$51,388	\$46,270
<b>NET OPERATING INCOME</b>	(\$1,250)	\$4,120	\$7,524	\$6,438	\$5,500	\$4,506	\$624	\$2,145	(\$7,345)	(\$4,153)
<b>CAPITAL EXPENSES</b>	\$3,770	\$2,106	\$10,694	\$11,170	\$11,722	\$13,053	\$5,524	\$4,315	\$3,466	\$3,813
<b>NET INCOME</b>	(\$5,020)	\$2,014	(\$3,170)	(\$4,732)	(\$6,222)	(\$8,547)	(\$4,900)	(\$2,170)	(\$10,811)	(\$7,966)

Source: City of Long Beach, Walt Disney Company and ERA

## Section VII

### MAINTENANCE COSTS

ERA's engineering consultant, Rados International Corporation, analyzed the present physical condition of the Queen Mary and provided estimates of the minimum required investment to bring the complex up to maritime industry standards and the annual cost of maintaining the ship at that level. The estimated costs pertain to items requiring immediate attention and to deferred repairs that should be made within three to five years. The detailed analysis is provided in Volume III of this report.

#### COSTS OF BRINGING SHIP UP TO INDUSTRY STANDARDS

A total investment of approximately \$27 million is required to bring the ship up to industry standards.<sup>1</sup>

Items requiring immediate attention total approximately \$6 million and deferred maintenance items total \$21 million. This deferred maintenance has been treated as a required capital expenditure of all ship operating options not as an operating expense. The major expenses pertain to the hull and mechanical systems. Cost of repairs to the hull are estimated at \$19.7 million and \$7.3 million for the mechanical system on the ship. The major items needing repair, replacement, or removal include the watertight bulkheads, the decks, the HVAC system, asbestos, removal, and the fire main, and a drydocking inspection. A drydock inspection is also necessary.

#### ANNUAL MAINTENANCE

Once the ship is brought up to industry standards, annual maintenance is estimated to require a total of \$4,853,000. This includes:

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<sup>1</sup>Industry standards refers to an accumulation of codes required for the safe and acceptable operations of the ship. These include the Uniform Building Code, national fire codes, national electric codes, O.S.H.A., and the maritime classification societies such as the American Bureau of Shipping, Lloyds of London, United States Coast Guard, International Maritime Consulting Organization, and Safety of Life at Sea.



Hull and structural maintenance	\$2,025,000
Mechanical Piping systems	2,770,158
Electrical system	58,000

This annual maintenance applies to all of the operating options considered by the Consultant Team (all options utilize the same basic physical space on the ship).

## **Section VIII**

### **IDENTIFICATION AND SCREENING OF POTENTIAL USES AND OPERATING STRATEGIES**

As discussed in our methodology section, the Consultant Team identified and screened a large number of potential new uses and operating strategies for the Queen Mary/Spruce Goose complex. This included uses proposed by the public, the Port and City, and the consultant team. The identification and screening process and the results of these analyses are discussed below.

#### **USE IDENTIFICATION AND SCREENING PROCESS**

The consultant team identified potential new uses for the Queen Mary/Spruce Goose complex by means of several brainstorming sessions, and by soliciting and reviewing uses and operating strategies submitted to the Port and City by the public. A complete list of the publicly submitted proposals reviewed by the Consultant Team is listed in the Appendix.

Our process focused on the Queen Mary; however, uses and strategies for the Spruce Goose were also considered. The Londontown facility was excluded from our analysis. The team focused on the Queen Mary for several reasons. These include its high maintenance cost, its history of financial loss, and the ability of the Port and City to control its destiny. This is as opposed to the Spruce Goose which has comparably modest maintenance costs, is owned by the Aero Club of Southern California, and under the terms of Disney's lease with the Port must be removed with the dome at the termination of the lease in September, 1992.

Over 60 uses were identified in this process. These included uses in the following categories: commercial recreation and retail, public and cultural facilities, institutional uses, office and commercial, lodging and clubs, programmatic concepts, and operating options. The various uses in these categories were then screened utilizing a

matrix analysis. Our matrix analysis rated the identified uses and operating strategies using several factors. These included the following:

1. Physical Compatibility with the Space Available on the Ship/in the Dome.
2. Market Demand for the Use.
3. Operating Income Potential.
4. Revenue Potential to the City/Port.
5. Development Cost and Space Modification Requirements.
6. Compliance with State Tidelands and Other Regulatory Guidelines.
7. Overall Rating by Consultant Team.
8. Public Acceptance of the Use.

The complete matrix analysis is shown in the Appendix.

### **RESULTS OF SCREENING PROCESS**

The above screening process resulted in a short list of uses and operating strategies which the Consultant Team, and the Port and City of Long Beach felt represented the most acceptable and financially viable alternatives for the Queen Mary/Spruce Goose Complex. The short list included four potential new uses for the Queen Mary. These are as follows:

1. An entertainment center combining restaurants, retail, and themed entertainment venues.
2. A card club/casino.
3. A timeshare development.
4. A maritime museum combined with an aquarium onshore.

The short list also included four operating/disposition strategies for the ship. These are:

1. Base Case — operate under current conditions (assuming the hotel is open and the Spruce Goose stays).
2. Partial Use — mothball the lower decks and retain a limited tour, restaurants, and retail, on the Promenade, Sun, and Sports decks.
3. Mothball — mothball the entire ship but retain it as an icon.
4. Disposition — dispose of the ship by sinking, selling, or scrapping.

Several options were also considered for the Spruce Goose. The new uses considered for the Spruce Goose include:

1. Aviation Museum — retaining the Spruce Goose.
2. Maritime Museum — serving as the onshore space for a Maritime Museum which would have the Queen Mary as its chief exhibit.
3. A Card Club/Casino.
4. A Public Recreation and Aquatics Center.
5. A Sports Complex — including tennis, exhibition volleyball, public aquatics, and other sports exhibition space.
6. An Indoor Waterpark, Swimming Complex (similar to the Centrum Complex in Europe).

The operating/disposition strategies considered for the Spruce Goose include:

1. Base Case — operate under current conditions with the Queen Mary.
2. Operate as a Stand-Alone Attraction — assuming the Queen Mary is not operational and a separate admission is required for the Spruce Goose.
3. Disposition — the plane and the facility are disposed of.

The above short-listed strategies were analyzed further by ERA to assess their economic feasibility. This analysis is discussed in the subsequent section.

## **Section IX**

### **ECONOMIC ANALYSIS AND PROJECTIONS SHORT-LISTED USES**

#### **INTRODUCTION**

In this section, the economic potential of the short-listed uses for the Queen Mary/Spruce Goose complex are discussed. The concept for the various uses are outlined, the market demand reviewed, and the operating economics projected. While all of the short-listed uses have some merit, we have focused our analysis on the capability of the uses to generate high revenues which can support the maintenance cost of the ship. Subsequent to ERA's analysis of the operating economics of the various uses, KRM utilized ERA's conclusions to develop a financial and economic impact model (discussed in Sections X and XI.)

Of the four new uses examined for the Queen Mary, two proved feasible from an operating perspective. These were the entertainment center, and the entertainment center combined with a card club. For these two uses ERA projected detailed operating economics, which are discussed in detail below. The other two uses, the timeshare development and the maritime museum were not feasible. It became apparent at different points in our analysis that these two uses were infeasible. At that point we halted our analysis and summarized our findings. These are discussed below.

## **OPTION 1 — ENTERTAINMENT CENTER**

### **Concept**

Entertainment centers are a concept which evolved in the 1980s to satisfy demand for urban entertainment, eating, and shopping experiences. The centers combine specialty retail with themed restaurants, bars, clubs, and attractions. Typically, one admission price covers admission to multiple entertainment venues. The centers cater to both daytime eating and shopping, as well as nighttime entertainment, with the primary emphasis on the nighttime activities.

The concept for the Queen Mary Entertainment Center was developed with the following objectives in mind:

- Increase resident market attendance. Studies by Wrather indicated that tourism support alone was insufficient to support the Queen Mary Complex and that stronger resident market attendance was necessary.
- Maintain tourism appeal and ability to tour the Queen Mary. The concept calls for retaining a limited tour of the Promenade, Sun, and Sports deck.
- Create nighttime as well as daytime activities and attendance.
- Work within the existing available space. ERA's engineering consultant has indicated that any change in space configuration would be very costly due to asbestos problems, the requirement to upgrade handicap access to the new ADA standards, and material handling costs (difficulty of shipboard access for construction materials).
- Limit space usage to upper decks to reduce maintenance costs.

Based on these objectives, and the primary objective of financial viability, ERA reviewed the available spaces on the upper decks of the ship, and developed a concept which would effectively utilize this space. This concept is shown in Table IX-1.

Table IX-1

## SIZING OF ENTERTAINMENT CENTER COMPONENTS

<u>Component</u>	<u>Location</u>	<u>Use Options</u>	<u>Size (sq.ft.)</u>
<b><u>Restaurant</u></b>			
Promenade Cafe	Promenade Deck	Restaurant	4,100
Chelsea Cafe	Promenade Deck	Restaurant	2,000
Sir Winstons	Sports Deck	Restaurant	3,500
Carts	Promenade & Sports Deck	Food & Beverage	n.a.
Queen Salon	Promenade Deck	Dinner Theater, Comedy Club, Card Club	<u>6,400</u>
Subtotal Restaurant			16,000
<b><u>Entertainment/Attractions</u></b>			
Observation Lounge	Promenade Deck	Music Club (Jazz, Gay 90s, Dance)	4,600
Royal Salon/Kings View Rooms	Promenade Deck	Sports Bar, Billiards, Magic Club	4,000
Wedding Chapel/Chapel, Victorian Room	Promenade Deck	Sports Bar, Billiards, Magic Club, Maze	3,300
Brittania Salon	Main Deck	Specialty Film, Card Club, Music, Comedy Club	9,000
Veranda Grill	Sun Deck	Music/Dance	4,000
Exhibit/Display Area	Sun Deck, Sports Deck	Museum, Tour	<u>15,000</u>
Subtotal Entertainment/Attractions			39,900
<b><u>Retail</u></b>			
Piccadilly Circus/Port Side Offices	Promenade Deck	Specialty Retail	11,000
Total			<u>66,900</u>
Total Visitor Area Support (at 20%)			<u>13,000</u>
Total Complex			79,900

Source: Economics Research Associates.



The concept calls for retaining and upgrading the existing restaurants, expanding the retail space, and converting the ballroom and salon areas to clubs featuring music, magic, comedy, sports, billiards, and other clubs generally themed around the Queen Mary past. A dinner theater as a separate charge has also been included in the concept. The project would include full usage of the Promenade, Sport, and Sun decks and partial usage of the Main deck. The total project size would be approximately 80,000 square feet. The estimated cost for the proposed concept is \$4.8 million (a detailed conceptual cost estimate is shown in Volume III of this report).

### Comparable Projects

ERA surveyed comparable entertainment centers, specialty retail centers, and dinner theaters. The detailed survey information on these facilities is shown in the Appendix while their general characteristics as applicable to our analysis are discussed below.

Examples of entertainment centers include Church Street Station and Pleasure Island in Orlando, Florida, the Dallas West End in Dallas, the planned City Walk at Universal City and to a certain extent the historic Tivoli Gardens in Copenhagen. The general characteristics of selected facilities are shown in the text table below.

<u>Entertainment Center</u>	<u>Size (sq.ft.)</u>	<u>Admission</u>	<u>Attendance</u>
Church St. Station	125,000	\$15.95	1,500,000
Pleasure Island	135,000	13.73	2,500,000 <sup>e</sup>
Dallas Alley	160,000	5.00	800,000
City Walk	210,000	n.a.	n.a.

<sup>e</sup> = estimate.

n.a. means not available.

Financially, entertainment centers tend to generate sales per square foot similar to specialty retail centers, with restaurants generating from \$300 to \$500 per square foot, and retail from \$250 to \$450 per square foot. Per capita expenditures for the entertainment components typically range from \$10 to \$20 including admissions and alcohol.

Dinner theaters tend to generate less attendance than entire entertainment centers due to capacity and product limitations, but higher per capita expenditures. Attendance generally ranges from 100,000 to 500,000 persons per year depending on the scale of the facility and the frequency of the shows. Admission prices at dinner theaters typically range from \$24 to \$40 which includes dinner, the show, and sometimes one drink. Further alcohol expenditures are in addition and range from \$2.00 to \$5.00 per capita.

### **Market Evaluation**

Entertainment centers derive demand from both tourist and resident markets. Long Beach has a very large, dense resident market consisting of nearly 3.0 million persons within a 15-mile radius which is the primary drawing distance for a center of this type (detailed market characteristics are shown in the Appendix). Additionally, Long Beach benefits from a substantial overnight tourist market of nearly 2 million persons per year, and good convention business (entertainment centers have strong appeal to conventioners).

While there are some specialty retail complexes in the area, the most successful of which is Shoreline Village, ERA does not consider these directly competitive with the proposed concept. The entertainment center has a stronger entertainment, restaurant, and nighttime orientation than specialty retail centers. Currently, there are no comprehensive entertainment centers of the type proposed in the Long Beach, South Bay, or Northern Orange County markets.

The proposed center's location in the Queen Mary will give it a unique appeal unmatched in the market. The established image of the Queen Mary as an area attraction, its historical significance, and its early 1900s finishes will contribute to the appeal and value

of such an attraction. Overall, ERA feels there is a strong market for this type of attraction; indeed, Disney recommended a similar component as a major element in their planned development.

### Economic Projections

Based on the available markets, the performance of comparable attractions, the historical performance of the Queen Mary tour, and the unique characteristics of the proposed concept, ERA projected the economic performance of the Queen Mary Entertainment Center.

#### Attendance

Attendance at the facility will be derived from both residents and tourists. Three separately gated areas will receive attendance under this concept; the entertainment center, the limited tour, and the dinner theater. The attendance projections for the entertainment center are shown in Table IX-2.

As indicated in the table, it is projected that initial-year attendance at the entertainment center will equal some 750,000 persons. This initial-year attendance is projected to expand to 830,000 by Year 5 and 900,000 by Year 10.

In addition to the entertainment center, attendance will be generated by the limited tour which will remain on the Queen Mary and charge a separate admission. This attendance will consist of entertainment center visitors who choose to go on the tour, as well as daytime visitors to the tour only. Two factors will impact the attendance of the proposed tour relative to the current tour; its lower price, and the significantly limited nature of the tour relative to the existing one. It is expected that on balance, attendance will be lower than that experienced in recent years. Attendance for the tour is projected at 640,000 persons for Year 1 (some 20 percent less than currently attending), declining slightly over the years to 580,000 in Year 5 and 550,000 in Year 10. Continued attendance erosion is expected on the tour portion of the project. It is felt however, that the entertainment center can slow the rate of

Table IX-2

**ENTERTAINMENT CENTER  
ATTENDANCE PROJECTIONS  
1992**

**Market Size**

Primary Resident Market (0-15 miles)	2,997,000
Primary Tourist Market (Overnight Visitors to Long Beach)	1,915,000

**Penetration Rates**

Primary Resident	12.0%
Primary Tourist	15.0%

**Estimated Attendance**

Primary Resident	360,000
Primary Tourist	287,000
Other <sup>1</sup>	<u>103,000</u>
Total	750,000

<sup>1</sup>Residents and tourists outside of primary market areas, estimated at 14 percent of total attendance.

Source: Urban Decision Systems; Long Beach Convention and Visitors Bureau; and Economics Research Associates.

decline from its historical average of 9 percent per year (since the addition of the Spruce Goose) to roughly 2 percent per year.

Finally, the dinner theater, while part of the entertainment center, will have a separate admission, and separate attendance. Dinner theater attendance is projected at 185,000 persons per year. Dinner theater attendance is expected to remain relatively stable due to capacity limitations.

#### **Per Capita Expenditures and Sales**

Per capita expenditures have been projected for the various gated components of the entertainment center based on recommended admission prices, and typical sales for other items such as snacks and alcohol. For the non-gated areas including the restaurants, and retail area, sales have been analyzed on both a per capita and a square foot basis to reflect historical Queen Mary sales, the sales generated at comparable facilities, and the fact that these areas will benefit from patronage from the entertainment center, the tour, and the general public.

ERA recommends an admission price of \$12.95 to the entertainment center, \$6.95 to the limited tour, and an average admission price of \$30 to the dinner theater (actual admission price will vary relative to time and day of show). Based on these prices, and accounting for discounts for groups, children, seniors, and others, per capita admission expenditures are projected at: \$11.65 for the entertainment center, \$4.86 for the limited tour, and as mentioned, \$30 for the dinner theater.

The entertainment center concept calls for some 11,000 square feet of restaurant space (not counting the dinner theater, and including support space). The Queen Mary restaurants are currently generating estimated sales of \$423 per square foot (this figure excludes sales associated with Londontown and the Spruce Goose). With the addition of the entertainment center and expansion and improvements of several of the restaurants, it is

estimated that sales will increase some 10 percent on a square foot basis or to \$440 per square foot in the initial year.

Additional food and beverage sales will be derived from alcohol and snack purchases in the clubs and alcohol purchases at the dinner theater. It is estimated that the clubs will generate per capita food and beverage expenditures of \$3.40, and the dinner theater will generate \$2.50 per capita expenditures for alcohol assuming one free drink is included with the meal.

Current retail sales at the Queen Mary (not including Londontown and the Spruce Goose) are estimated at roughly \$250 per square foot. ERA believes that these sales will expand with the increased space and variety of goods, and with the addition of the entertainment center. Retail sales have been projected at \$275 per square foot, or a per capita expenditure of some \$4.00 in the initial year.

All expenditures have been adjusted over the ten-year projected period to account for inflation and changing attendance.

#### **Operating Revenues, Expenses, and Net Operating Income**

Based on the above factors, ERA has projected the operating economics of the entertainment center. The basic assumptions of our analysis are as follows:

1. The facility will be professionally, operated, managed, and marketed by an experienced team in the attractions and retail business.
2. The concept will be designed by attractions and retail industry experts and will be implemented according to the highest quality standards of these industries.
3. Inflation of 4 percent.
4. Operating expenses and cost of goods sold are based on standard industry ratios modified to reflect the specific concept and historical expenses with the

exception of maintenance and utilities. Maintenance and utilities are based on actual ship requirements established by ERA's engineering consultant. Annual maintenance expense assumes that the required deferred maintenance discussed earlier is performed.

5. Other detailed assumptions of the operating economic projections are indicated in the Appendix.

Our projections are shown in Table IX-3.

As indicated, gross revenues for the entertainment center are projected to range from approximately \$28 million in the initial year to nearly \$45 million by Year 10. Cost of goods sold is estimated to range from some \$5 million to \$8 million during the same period. Operating expenses are projected to be some \$23 million in the initial year, expanding to approximately \$35 million by Year 10.

While entertainment centers can generate fairly strong operating incomes, the proposed entertainment center's projected operating income is very modest compared to revenues. This is due to the extraordinarily high maintenance costs of the ship compared to more typical maintenance for a land-based operation, and to higher utility charges associated with ship systems operations. Net operating income is projected at some \$1 million for the initial year, expanding to slightly over \$2 million by the end of the projection period.

Although net operating income is projected as positive for this use, and it is thus "feasible" from an operating perspective, this level of income will be insufficient to support the cost of deferred maintenance on the ship. As mentioned in the maintenance section of this report, deferred maintenance has been treated as a capital expenditure required for any operation of the ship, not an operating expense.

Table IX-3

## PROJECTED OPERATING REVENUES, EXPENSES AND OPERATING PROFITS

## Option 1 - Entertainment Center

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<b>REVENUES (000)</b>										
Admissions - Ent. Center	\$8,740	\$9,330	\$9,950	\$10,610	\$11,310	\$12,190	\$12,820	\$13,490	\$14,190	\$14,920
Admissions - Mus. & Tour	\$3,110	\$3,108	\$3,105	\$3,134	\$3,196	\$3,259	\$3,323	\$3,388	\$3,455	\$3,523
Food and Beverage	\$7,500	\$8,010	\$8,540	\$9,110	\$9,710	\$10,460	\$11,010	\$11,580	\$12,180	\$12,810
Merchandise	\$3,000	\$3,200	\$3,420	\$3,640	\$3,880	\$4,190	\$4,400	\$4,630	\$4,870	\$5,120
Dinner Theater	\$6,000	\$6,240	\$6,490	\$6,749	\$7,019	\$7,300	\$7,592	\$7,896	\$8,211	\$8,540
Gross Revenues	\$28,350	\$29,888	\$31,505	\$33,243	\$35,115	\$37,399	\$39,145	\$40,984	\$42,906	\$44,913
Less: Cost of Goods Sold	\$4,670	\$4,960	\$5,270	\$5,590	\$5,940	\$6,370	\$6,680	\$7,020	\$7,370	\$7,730
Net Revenue	\$23,680	\$24,928	\$26,235	\$27,653	\$29,175	\$31,029	\$32,465	\$33,964	\$35,536	\$37,183
<b>DIRECT OPERATING EXPENSES (000)</b>										
Wages, Salaries	\$10,430	\$10,860	\$11,300	\$11,930	\$12,600	\$13,420	\$14,040	\$14,710	\$15,400	\$16,110
Advertising & Promotion	\$1,810	\$1,890	\$1,970	\$2,070	\$2,190	\$2,330	\$2,440	\$2,560	\$2,680	\$2,800
Maintenance & Repair	\$4,853	\$5,047	\$5,249	\$5,459	\$5,677	\$5,904	\$6,141	\$6,386	\$6,642	\$6,907
Operating Supplies	\$680	\$710	\$740	\$780	\$820	\$880	\$920	\$960	\$1,000	\$1,050
Utilities	\$1,902	\$1,978	\$2,057	\$2,139	\$2,225	\$2,314	\$2,407	\$2,503	\$2,603	\$2,707
Contract Entertainment	\$910	\$940	\$980	\$1,040	\$1,100	\$1,170	\$1,220	\$1,280	\$1,340	\$1,400
General & Administrative	\$1,810	\$1,890	\$1,970	\$2,070	\$2,190	\$2,330	\$2,440	\$2,560	\$2,680	\$2,800
Total Direct Operating Expenses	\$22,680	\$23,610	\$24,570	\$25,930	\$27,390	\$29,170	\$30,530	\$31,970	\$33,470	\$35,030
<b>OPERATING INCOME (000)</b>										
Operating Income	\$1,000	\$1,318	\$1,665	\$1,723	\$1,785	\$1,859	\$1,935	\$1,994	\$2,066	\$2,153
Less: Land Lease	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Net Operating Income	\$1,000	\$1,318	\$1,665	\$1,723	\$1,785	\$1,859	\$1,935	\$1,994	\$2,066	\$2,153



## **OPTION 2 — ENTERTAINMENT CENTER AND CARD CLUB**

### **Concept**

A casino and/or card club was the second short-listed use to be analyzed by ERA. ERA considered this concept as a stand-alone facility on the Queen Mary, but upon analysis of this idea we modified the concept to be a combination project consisting of a moderate sized, upscale card club with an entertainment center. Our rationale for this concept included the following:

1. Casinos are not legal in the State of California. Developing a full-scale casino on the Queen Mary would require a modification to the state constitution. This would undoubtedly prove to be a long process with questionable probability of success.
2. Our interviews with card club operators indicated that large contiguous spaces (20,000 square feet or more gaming area plus support space) are necessary for successful operations of a large card club. The Queen Mary has several moderate-scaled spaces on its upper decks (approximately 5,000 to 9,000 square feet) which are ideally suited for a more limited card club. Combining these spaces into a larger complex would be difficult, costly, and could be undesirable from a club operations and security perspective.
3. While there are some larger conference, exhibit, and banquet spaces on the lower decks (18,000-square-foot, 12,000-square-foot and 15,000-square-foot spaces D, E and F decks, and 9,000-square-foot and 3,000-square-foot spaces on the R deck), these spaces are essentially inaccessible from the promenade and other upper decks, where the tour, retail, and restaurants are located, and the D, E and F deck spaces are designed with a central atrium which would prohibit the use of certain spaces due to lack of ceiling space for security cameras. The absence of continuity in space use would create certain maintenance, operating, utilities, and rehabilitation problems. Should the Port and City decide that a larger card club is desirable, however, ERA would recommend that these spaces be examined by card club operators and designers as possible locations.
4. The operation of a card club would require approval by municipal authorities and the public. A moderate-scaled club combined with an entertainment center may

have a better chance of municipal and public approval than a large facility with its attendant image and operational challenges.

5. A large card club located on the Queen Mary would set the tone for the surrounding development on the Port side of Queensway Bay. This situation would be exacerbated with a hotel element. A moderate-scaled club combined with the entertainment center would not run the same risk of tainting the surrounding development as a larger scale club.
6. A moderate-scale card club with an upscale orientation would be very synergistic with the entertainment center. The club would benefit from, and broaden the market appeal of the entertainment center, could share resources with the center, and would serve as a strong revenue producer to complement the entertainment center operation.

Based on these issues, ERA has recommended and analyzed a moderate-scale card club with an entertainment center as the second major option for the Queen Mary. We have not completely ruled out the possibility of a larger card club on the Queen Mary, a phased expansion of the card club, or a large card club with a hotel element. These options, however, would face the above noted challenges, and would need to be analyzed by the Port and City with card club operators, designers, naval architects, and in consideration of the above risks and challenges.

The physical configuration of the entertainment center with the card club is identical to that of the entertainment center with the exception that the card club has been placed in the largest available space, the Britannia Salon. The major club assumed to be occupying that space was shifted to the observation lounge, and the club in the observation lounge eliminated. The entertainment center with the card club would thus have one less themed club.

The estimated development cost of the entertainment center with the card club is \$4.9 million. A detailed cost estimate is provided in Volume III of this report.

### Comparable Projects

Card clubs have been expanding in the Greater Los Angeles area over the last ten years as a form of legalized gambling. The Normandie Club in Gardena has been in existence for some 40 years, however, the other clubs in the area were built in the 1980s. Card clubs provide a range of poker, and Asian games. The clubs are distinguished from casinos in that there are no "games of chance" such as roulette, slot machines, and black jack, and gamblers do not bet against the house. The facilities also tend to have smaller gaming areas than typical casinos, and are not directly associated with resort hotels, as are most casinos.

The general characteristics of the areas major card clubs are shown in Table IX-4 (detailed characteristics are shown in the Appendix). As indicated, the large clubs are over 100,000 square feet. The clubs have from about 40 to 180 tables each. The high-revenue-generating clubs typically contain 150 tables or greater, with 150 square feet of space per table required plus support space. The larger clubs provide restaurants, show and meeting rooms, and other support facilities.

Card clubs generate very high levels of revenues, which are typically taxed by local authorities at rates ranging from 7 to 14 percent. The clubs, therefore, provide very high levels of tax revenues to the local municipality. The gross revenues and taxes of the area clubs are shown in the text table below.

<u>Card Club</u>	<u>1991 Gross Revenues (millions)</u>	<u>1991 Tax Revenues (millions)</u>
Commerce Club	\$76	\$10
Bicycle Club	\$90	\$11
Normandie & Eldorado Clubs	\$36	\$ 5

Card clubs' revenues are primarily derived by a fee paid per hand by gamblers. The fee per hand varies with the betting limit on the games. Betting limits can range from \$2 to \$1,000. Low-stakes poker games typically require per hand fees of \$3 to \$5, while the Asian

Table IX-4

PHYSICAL CHARACTERISTICS OF  
SOUTHERN CALIFORNIA CARD CLUBS

<u>Club/Location</u>	<u>Year Opened</u>	<u>Number of Tables</u>	<u>Size Facility/ Casino (sq.ft.)</u>	<u>Amenities</u>
Commerce Casino City of Commerce	1984	177	130,000/ 30,000	2 restaurants, coffee shop, deli, ballroom (capacity 600), lounge
Bicycle Club Bell Gardens	1984	170	101,000/ n.a.	Restaurant, bar, meeting room, bakery, barbershop
Normandie Club Gardena	1980 <sup>1</sup>	80	n.a.	Restaurant, showroom (capacity 240)
Eldorado Club Gardena	1967	42	60,000/ 29,000	Restaurant , bar, buffet
<b><u>Proposed</u></b>				
Hollywood Park Inglewood	1993-94e	150-200	150,000 <sup>2</sup>	Restaurant, boutiques, intertrack wagering

n.a. means not available. e = estimate.

<sup>1</sup>12 years in this location, 40 years in Gardena.

Source: Economics Research Associates.

games which are the most profitable have per hand fees of \$5 to \$10 for the low-stakes games and from \$30 to \$100 for the higher stakes games. The Asian games profitability comes from not only high stakes, but also larger numbers of persons per game. Typically poker games are limited to 4 to 6 players per game. Some of the Asian games can accommodate up to 20 players per game. Total revenues at card clubs have historically ranged from \$100,000 to over \$600,000 per table, per year.

### Market Evaluation

Our market conclusions for Option 1 apply to the entertainment center portion of Option 2. That is, we have assumed that the entertainment center portion of the project will perform at the same market level with the card club as without. While the entertainment center will have one less club, we feel that the addition of the card club will broaden the market appeal of the complex, and thus, compensate for the loss of the one club. Comments regarding the specific market for the card club follow, and represent the consultant team's analysis of the market after interviewing card club operators.

There are currently four major card clubs within approximately 25 miles of the Queen Mary, with one additional club being planned by Hollywood Park in Inglewood. While there are quite a few clubs in the market, all of them are performing well, and the addition of new clubs in the 1980s did not have a negative impact on existing clubs. We feel that the scale of the Los Angeles market, and the increasing orientation of the card clubs towards a more upscale environment which can compete with Las Vegas for gamblers' dollars bodes well for an expanding market for this sort of facility.

The location of a card club on the Queen Mary provides some distinct market advantages. First, the facility is close to the Orange County market which card club operators feel is a strong untapped target market. Orange County has high income levels, many professionals, and Asian and other ethnic communities, all of which are good markets for card clubs. Secondly, the Queen Mary has good access via the Long Beach freeway to other Asian communities such as Monterey Park and Garden Grove. Thirdly, the Queen Mary is

well situated to capture convention business from the Long Beach Convention Center which is currently undergoing expansion (the card club will also provide a good marketing tool to sell conventions in Long Beach). Finally, the Queen Mary is isolated from residential areas, has a large parking area, and has interior spaces, which, while smaller than those typically required, are designed with quality decor and designed such that a moderate sized card club could be fairly easily retrofitted into them.

Overall, ERA feels that the market is strong for a card club on the Queen Mary. The planned facility should be capable of capturing a fair share of the market, and generating revenues on the level of a moderate-scale facility.

### **Economic Projections**

Based on the above analysis, and the previous analysis of the entertainment center, ERA projected the economic performance of the entertainment center with the card club.

### **Per Capita Expenditures and Sales**

The previous per capita expenditures projected for the entertainment center have been adjusted to reflect the fact that there will be one less themed club in this option due to the addition of the card club. The entertainment center in this concept will have four clubs as opposed to five. Because the appeal of the entertainment center is based on the critical mass of both its clubs and the retail and restaurants we have not reduced admission expenditures on a linear basis with the loss of one club. It is ERA's opinion that an admission expenditure reduction of 10 percent is appropriate in this case. Per capita admission expenditures under this concept are thus estimated at \$10.48, which implies an admission price of roughly \$11.65.

There will also be a modest reduction in food and beverage and merchandise expenditures associated with the loss of the one club. We have estimated that there will be a 10 percent reduction in food and beverage expenditures in the clubs (assuming restaurant sales remain fairly constant at about \$440 per square foot), or a 3 percent reduction in food

and beverage expenditures overall. This equates to a food and beverage per capita expenditure for the clubs of about \$3.00 or a total food and beverage per capita expenditure of \$9.70. Merchandise expenditures are projected to decline about 5 percent to \$3.80 per capita or approximately \$260 per square foot.

Regarding per capita expenditures for the other gated facilities, the limited tour and the dinner theater are projected to remain the same as in Option 1.

Card club sales projections are based on sales per table found in comparable projects. Sales per table tends to expand significantly the larger the size of the facility, and with increasing ability to provide space for Asian games. We have projected sales per table of \$300,000 in the initial year, increasing to \$400,000 by Year 5, and \$450,000 by Year 7 and thereafter. While this level is lower than that obtained at the larger clubs, it is consistent with the clubs having smaller table counts. Sales per table projections include gaming and food and beverage revenue.

We have assumed that the card club will be located in the Britannia Salon, an approximately 9,000-square-foot space. This space should accommodate roughly 50 tables using industry standard ratios of 150 square feet per table plus support space.

#### Operating Revenues, Expenses, and Net Operating Income

Based on the above factors, and the factors and assumptions previously discussed under Option 1, the operating economics of Option 2 are indicated in Table IX-5.

As shown, gross revenues for the entertainment center are somewhat lower than in Option 1, beginning at \$27 million in Year 1, and expanding to \$43 million in Year 10. Gross revenues from the card club operation more than compensates for this minor loss. Gross revenues from the card club are projected to be \$15 million in the initial year, expanding to \$32 million by Year 10.

Cost of goods sold and operating expenses have been calculated in the same manner as in Option 1. Cost of goods sold are projected at \$4.5 million initially, growing to some

Table IX-5

## PROJECTED OPERATING REVENUES, EXPENSES AND OPERATING PROFITS

## Option 2 - Entertainment Center and Card Club

	1	2	3	4	5	6	7	8	9	10
<b>REVENUES (000)</b>										
Entertainment Center/Museum										
Admissions - Ent. Center	\$7,860	\$8,390	\$8,950	\$9,550	\$10,180	\$10,970	\$11,540	\$12,140	\$12,760	\$13,420
Admissions - Mus. & Tour	3,110	3,108	3,105	3,134	3,196	3,259	3,323	3,388	3,455	3,523
Food and Beverage	7,280	7,770	8,290	8,840	9,420	10,150	10,680	11,230	11,810	12,430
Merchandise	2,850	3,040	3,250	3,460	3,690	3,980	4,180	4,400	4,630	4,870
Dinner Theater	6,000	6,240	6,480	6,749	7,019	7,300	7,592	7,896	8,211	8,540
Gross Revenues Ent. Cent.	27,100	28,548	30,085	31,733	33,505	35,659	37,315	39,054	40,866	42,783
Card Club										
Gross Revenues Card Club	15,000	16,900	18,928	21,091	23,397	24,333	28,470	29,608	30,793	32,025
Total Gross Revenues	42,100	45,448	49,013	52,824	56,902	59,992	65,785	68,662	71,659	74,807
Less: Cost of Goods Sold	4,530	4,810	5,110	5,420	5,780	6,170	6,470	6,800	7,140	7,500
Net Revenue	37,570	40,638	43,903	47,404	51,142	53,822	59,315	61,862	64,519	67,307
<b>DIRECT OPERATING EXPENSES (000)</b>										
Entertainment Center/Museum										
Wages, Salaries	9,970	10,370	10,800	11,390	12,020	12,790	13,390	14,010	14,660	15,350
Advertising & Promotion	1,730	1,800	1,880	1,980	2,090	2,220	2,330	2,440	2,550	2,670
Maintenance & Repair	4,853	5,047	5,249	5,459	5,677	5,904	6,141	6,386	6,642	6,907
Operating Supplies	650	680	700	740	780	830	870	910	960	1,000
Utilities	1,902	1,978	2,057	2,139	2,225	2,314	2,407	2,503	2,603	2,707
Contract Entertainment	870	900	940	990	1,050	1,110	1,160	1,220	1,280	1,330
General & Administrative	1,730	1,800	1,880	1,960	2,090	2,220	2,330	2,440	2,550	2,670
Op. Exp. Ent. Center	\$21,680	\$22,550	\$23,470	\$24,750	\$26,130	\$27,610	\$29,110	\$30,460	\$31,880	\$33,370
Card Club										
Op. Exp. Card Club	\$10,500	\$11,830	\$13,250	\$14,764	\$16,378	\$17,033	\$19,929	\$20,728	\$21,555	\$22,417
Total Direct Expenses	\$32,180	\$34,380	\$36,720	\$39,514	\$42,508	\$44,643	\$49,039	\$51,186	\$53,435	\$55,787
Total Operating Exp.	\$32,180	\$34,380	\$36,720	\$39,514	\$42,508	\$44,643	\$49,039	\$51,186	\$53,435	\$55,787
<b>OPERATING INCOME (000)</b>										
Net Operating Income	\$5,390	\$6,258	\$7,183	\$7,891	\$8,634	\$8,978	\$10,276	\$10,676	\$11,084	\$11,520

Source: Economics Research Associates



\$7.5 million in Year 10. Operating expenses for the entertainment center in this option are somewhat lower than in Option 1 to account for the loss of one club. Operating expenses for the entertainment center are estimated at roughly \$22 million in the opening year, increasing to \$33 million by Year 10.

Operating expenses for the card club have been projected using card club and casino industry standards. Card club operating expenses are estimated at 70 percent of revenues. This ratio is at the low end of the range for operating expenses relative to revenues. However, ERA feels that due to the limited scale of the operation, and the benefits which will be derived from shared resources with the entertainment center, the facility should be capable of performing at this level. Operating expenses for the card club are projected at \$10.5 million in Year 1, expanding to \$22 million by Year 10.

Net operating income for Option 2 is the strongest of all of the options analyzed by ERA. Net operating income is projected to be roughly \$5.4 million in the initial year, expanding to some \$11 million by the end of the forecast period. Net operating income is expressed before depreciation, interest, taxes, and any lease or gaming tax payment.

This option proves to be feasible, and would contribute significantly to the support of the deferred maintenance necessary on the ship. A large-scale card club could also be feasible assuming that some of the ship's larger spaces could be designed to accommodate such a club, that developer/operator interest could be found, and that such a project would be approved. We would expect a larger club to earn revenues and income commensurate with those found at comparable clubs in the Los Angeles area.

### **OPTION 3 — TIMESHARE RESORT**

#### **Concept**

The concept for timesharing the Queen Mary consists of converting all or a portion of the Queen Mary hotel to timeshare units. Timeshare units enable purchasers to occupy resort units for a specific length of time each year over a period of years. A key feature of timeshare units is their ability to be placed on international timeshare exchange networks, and to be traded for timeshare use in other locations.

The objective of Option 3 would be to pay for the deferred maintenance cost of the ship by selling units, and to pay for the annual maintenance cost of the ship by charging an annual maintenance fee which is typical in the timeshare industry.

We analyzed two concept alternatives. The first alternative would be to use the hotel rooms as they are, and attempt to market them. The hotel rooms are mostly one bedroom, with an average size of about 200 square feet, and without cooking facilities. Typical timeshare units are one to three bedrooms, with an average size of 1,200 square feet, and with full kitchens. Because of the obvious shortcomings of the Queen Mary's hotel rooms relative to typical timeshare units, a second alternative was considered.

The second timeshare alternative consists of expanding the size of the rooms, and adding cooking facilities. This alternative would provide a smaller inventory of larger but higher quality units.

#### **Comparable Projects**

ERA surveyed comparable timeshare resorts in California and elsewhere in the U.S. The details of our survey are presented in the Appendix. Selected summary level information on timeshares is shown in the text table below.

Average Number of Units in Project	40-50
Range of Units in Projects	40-750
Average Unit Size (square feet)	1,200
Average Unit Price	\$8,750
Average Annual Maintenance Fee	\$300
Range of Absorption (units/year)	10-60
Typical Amenities	Pools, spas, sauna, exercise room, tennis, golf

### **Market Evaluation**

While there is theoretically a market for timeshare units on the Queen Mary due to its California oceanfront location, and its association with the historic Queen Mary, there are also numerous difficulties associated with this sort of use.

The first alternative of attempting to sell the rooms as they are has several problems. First, the rooms are very small, and while prices could be discounted to account for this fact, we question whether units of this type would be marketable. It is unlikely that such small units would receive annual repeat visitation. They would therefore need to be exchangeable on the timeshare networks. Due to the wide disparity between these units and those typically offered on exchange programs, this would be a problem. Additionally, the rooms have no cooking facilities, and the ship has limited other resort amenities which are typical for timeshare projects. Overall, we believe the market for units under this first alternative may be limited, and inherently costly and risky to attempt to penetrate.

The second alternative of expanding the rooms would eliminate or reduce some of the above mentioned product and marketing problems. However, this alternative would face its own unique set of challenges. First, the market for such shipboard, low amenity units would still be questionable, and risky to pursue. Second, the costs for expansion of the units and the addition of cooking facilities would be prohibitive. Asbestos abatement would be required for this area of the ship which would cost multiple millions of dollars; the new ADA handicap requirements would need to be met which would include access to the hotel area as well as internal modifications within the units themselves; and utility supply and venting

for kitchen facilities would be extremely costly, and difficult if not impossible from an engineering perspective. Thirdly, the units would not be marketable without some assurance that the other facilities on the ship (retail, restaurants, etc.) would be available for owners' use over the long term. This would imply the need to find a long-term operator of these facilities. Fourthly, potential buyers would be faced with unpredictable levels of maintenance which would be higher than expected and would thus dissuade them from purchase. Fifthly, it is not clear how the ownership of the entire ship would be structured. It is unlikely that the entire ship would be owned solely by the timeshare owners. Thus, a secondary entity would need to be responsible for partial ship ownership, maintenance, and liability.

A final factor which could limit the success of this option is the State Tidelands regulations. Approval of timeshare projects can not be guaranteed due to the private ownership nature of such a development. Private residential ownership is not allowed under state tidelands regulations. However, resort hotels are considered a recreation use and are thus allowed. Similar resort ownership projects in the past have required numerous concessions for approval which would impact the project financially.

### Economic Analysis

While there are clear market constraints to the timeshare concept, we have performed a brief analysis to determine if such a product could reasonably support maintenance costs of the ship. A reasonable level of absorption for such units would be 25 per year. Each unit consists of 5-week intervals. Thus a total of 1,250 intervals would be sold per year under this assumption.

Assuming the annual maintenance cost of the ship is similar to current estimates of approximately \$8 million per year, each interval owner for the first year could conceivably be required to pay a maintenance fee of \$6,400. This would decline as more units are sold; however, it is clear that such a maintenance fee requirement would make such a project infeasible. Indeed, the sales price of the interval units themselves would most likely be in the range of \$6,500 to \$7,500.

Given the market, product, regulatory, and economic constraints faced by this option, it is our opinion that such a development would be highly risky, and would prove to be infeasible.

## **OPTION 4 — MARITIME MUSEUM**

### **Concept**

Most major port cities have some type of tribute to their links and dependence on water as a means of transportation, commerce and culture. These institutions can be true museums which use collections of artifacts, interpretive material and other means to focus on the maritime history of a particular period or place; restoration projects, which maintain, preserve and present to the public a particular artifact (usually a ship); or memorial parks, which focus on a particular group of people or events. The more successful maritime museums in terms of attendance have broadened their somewhat narrow appeal by incorporating them into mixed-use complexes which often include aquariums.

The concept considered to be the most appropriate for the Queen Mary would be to incorporate a maritime museum into a larger mixed-used development which would include an aquarium developed on shore and which would also include an emphasis on programmatic elements. This will be addressed in the Phase II analysis. The concept would enable visitors to walk aboard the Queen Mary although all internal spaces would be closed and mothballed. Thus, the Queen Mary would serve as the primary exhibit. Other exhibits would include exhibits removed from the Queen Mary and replicated on shore, and exhibits dealing with the history of the Port of Long Beach or other maritime subjects. Approximately 25,000 square feet of exhibit space would be needed on shore. The museum is not recommended as a stand-alone facility.

### **Comparable Facilities**

ERA surveyed a number of existing maritime museums and aquariums in order to obtain information regarding their physical and operating characteristics, particularly level of attendance and economic performance. These data provide a frame of reference from which to examine the potential economic feasibility of a maritime museum associated with the

Queen Mary in Long Beach. Characteristics of the surveyed maritime museums and aquariums are provided in the Appendix tables and salient points are discussed below.

Nine maritime museums were surveyed, including three west coast facilities: Los Angeles Maritime Museum, San Diego Maritime Museum and San Francisco Maritime National Historical Park. Six of the surveyed maritime museums feature historic ships.

The Los Angeles Maritime Museum is located in San Pedro, in close proximity to the proposed maritime museum in Long Beach. The museum structure is a converted ferry boat terminal. It includes 25,000 square feet of exhibit space and displays ship models and paintings. The museum also includes a library and amateur radio station.

Of all of the surveyed maritime museums, Mystic Seaport Museum is the closest comparable to the proposed maritime complex. Located on the banks of the Mystic River in southeastern Connecticut, it is the largest and one of the most heavily visited of the surveyed maritime museums. It is fashioned after a typical 19th Century eastern seaport village. The 17-acre Seaport includes tall ships, historic buildings, a preservation shipyard, planetarium and exhibit buildings. Visitors see restored sailing ships, extensive collections of ship models and paintings, boating building and repair shops, and a small craft collection.

### Attendance

It appears that maritime history is a relatively specialized interest. Even in the large cities reviewed, all of which have major tourist markets, most maritime museums have modest levels of attendance. Attendance at the surveyed museums is summarized below:

San Francisco Maritime National Historical Park	485,000
South Street Seaport	450,000
Mystic Seaport Museum	432,000
USS Alabama Battleship Memorial Park	321,000
Patriots Point Naval & Maritime Museum	290,000
Los Angeles Maritime Museum	200,000
San Diego Maritime Museum	175,000
Vancouver Maritime Museum	100,000
Philadelphia Maritime Museum	90,000

As shown, there are four surveyed maritime museums which achieve annual attendance of over 300,000. These are San Francisco Maritime National Historical Park; Mystic Seaport Museum in Mystic, Connecticut; South Street Seaport Museum in New York City; and USS Alabama Battleship Memorial Park located in Mobile. All of these museums feature ships. South Street Seaport Museum, which is located within the South Street Seaport specialty center complex in New York, attracts only about 100,000 visitors to the museum building itself but draws 450,000 visitors annually when including excursionary boat tours. It should also be noted that San Francisco Maritime National Park includes a substantial amount of free attendance.

Several factors appear to be significant in attracting the higher volume of visitors: the presence of ships, the museum being part of a themed environment which includes demonstrations (as opposed to only static exhibits), and a historic maritime tradition in the area. The modest attendance typically found at maritime museums is a function of their passive and static nature, not unlike the Queen Mary and Spruce Goose.

#### Admission Prices

Admission prices at maritime museums are generally low, around \$5.00 for adults. There are two notable exceptions. Patriots Point charges \$8.00 and Mystic Seaport charges \$14.00 which are at the level of many commercial recreation attractions. However, Mystic Seaport's 3.5- to 4.0-hour length of stay is much longer than the 1 to 2 hours most maritime museums realize due to the wide variety of activities it offers. It should also be mentioned that even with this high admission price Mystic Seaport is able to draw very high attendance for a maritime museum.

#### Financial Performance

Maritime museums do not normally generate enough income to cover their operating expenses. The more successful ones cover from 80 to 90 percent of their operating expenses from earned revenue, with the balance supplied from memberships, contributions and



endowments. No maritime museums are able to pay for their capital development costs from operations.

### Market Evaluation

Maritime museums draw the majority of their attendance from tourist markets. Long Beach receives nearly 2 million overnight visitors annually. In addition to Long Beach overnight visitors, who are considered to be the primary tourist market, the museum will benefit from its exposure to visitors to the Greater Los Angeles region. This secondary tourist market consists of recreation-oriented overnight visitors to the Greater Los Angeles region, less visitors to Long Beach and less residents of other Southern California counties. This includes some 11.7 million visitors.

The available resident market includes persons residing within an approximate 15-mile radius of the Queen Mary, which is considered to be the primary market for a maritime museum at the subject location. This is a dense market with some 5,105,000 residents.

There is one existing maritime museum located in the market area, Los Angeles Maritime Museum. Due to its limited scale, we do not consider it to be directly competitive. We would suggest the possibility of the Los Angeles Maritime Museum joining in a cooperative effort.

### Attendance

The attendance volume projected for the maritime museum is a function of several factors, including the size of the available resident and tourist markets and the ability of the facility to penetrate these markets. Based on the attendance characteristics of the surveyed maritime museums, the locational and other attributes of the Queen Mary, and assuming an adjacent aquarium is built, attendance has been projected for this use.

Table IX-6 presents penetration rates and total projected attendance for the maritime museum as of 1992. As indicated attendance of 514,000 is projected. The Queen Mary is located in a tourist corridor, the ship is known worldwide and the ship would be the

Table IX-6

**MARITIME MUSEUM  
ATTENDANCE ANALYSIS  
1992**

**Market Size**

Primary Resident Market (0-20 miles)	5,105,000
Primary Tourist Market (Overnight Visitors to Long Beach)	1,915,000
Secondary Tourist Market (Balance of Recreation-Oriented Visitors to Los Angeles)	11,700,000 <sup>1</sup>

**Penetration Rates**

Primary Resident	2.5%
Primary Tourist	13.0%
Secondary Tourist	1.0%

**Estimated Attendance**

Primary Resident	128,000
Primary Tourist	249,000
Secondary Tourist	<u>117,000</u>
Subtotal	494,000
Other Southern California Residents	<u>20,000</u>
Total	514,000

<sup>1</sup>Does not include Southern California residents.

Source: Urban Decision Systems; Long Beach Convention and Visitors Bureau;  
Los Angeles Convention and Visitors Bureau; and Economics Research  
Associates.

museums's main exhibit. We would thus expect the maritime museum to generate attendance at the upper end of the range for maritime museums.

### **Economic Evaluation**

We expect that the maritime museum could operate on a break-even basis, but would not generate enough income to pay for development costs or to cover any of the maintenance costs of the ship. This use is therefore considered infeasible.

## **OPTION 5 — OPERATION UNDER CURRENT CONDITIONS**

### **Concept**

To provide a base case analysis, ERA modeled the continued operation of the Queen Mary/Spruce Goose complex under current conditions. We have assumed the following for this analysis:

1. The Spruce Goose remains on site.
2. The Queen Mary hotel is open.
3. A new operator is found for the complex.
4. No major new attractions/expansions occur during the ten-year projection period.
5. The deferred maintenance required on the ship is performed in the recommended time frame.

Other assumptions are noted below under the Economic Projections heading.

### **Comparable Projects**

The chief comparable project for this analysis is the historical operation of the complex itself. As discussed in Section VI of this report, ERA reviewed the operations and financial performance of the facility under Wrather and Disney management, and discussed the facility with both Wrather and Disney executives.

To summarize our findings in Section VI, the complex produced operating income before capital expenditures during the Wrather years. This was primarily due to the addition of the Spruce Goose attraction which temporarily boosted attendance, as well as strong attraction and hotel markets through the early and mid-80s. As the impact of the Spruce Goose waned, and the hotel market softened, performance of the facility declined. Additionally, after capital expenditures, the complex apparently lost money in all but one year during the pre-Disney management period based on information received from the City of Long Beach Auditing Office. Disney began management of the attraction as the markets

continued to soften. Under Disney management, attraction and hotel performance continued to decline. Operating income continued its downward trend, which began during the Wrather years, and turned negative in 1990. Disney attempted to revive the attraction through heavy marketing, promotion, special events, and entertainment. However, these efforts produced few results. The project is currently suffering from serious operating deficits, still faces a weak market, and is in need of much costly repair.

It is the consultant team's opinion that the primary problem with the Queen Mary complex is not its management. The problem is the product and its markets. The attraction has lost money for nine of the last ten years under both Wrather and Disney management. The attraction has inherently low repeat visitation, is passive, is located on the waterfront so that it has only half of a market geographically speaking, and is situated in one of the U.S.'s most competitive attraction markets. While Disney has upgraded the hotel rooms on board the ship, the hotel still has rooms half the size of hotels of similar price, and is facing a very overbuilt market with shrunken demand.

### **Market Evaluation**

The attraction market in Los Angeles has been impacted negatively in the last several years by the recession and a drop-off in tourism. In 1991, major attractions in the Los Angeles basin began an unprecedented lowering of prices in an attempt to capture new resident market business. The 1992 attractions market has experienced a convergence of two trends; a slight increase in resident market demand due to the waning recession and pent-up demand from the recession, and a decline in tourist market demand due to the LA riots, earthquakes, and other factors. It is our expectation that both the residential market and tourism market will recover slowly from their current state.

The hotel market in Long Beach and Los Angeles continues to suffer from an over-supply of rooms and poor demand. We expect this situation to continue for several years in Long Beach, after which the hotel market should begin to improve as tourism rebounds, and growth in economic activity generates business and group demand.

Part of the Queen Mary's recent poor performance is clearly due to bad markets. Based upon this fact, we have projected attraction attendance to remain stable for the first year of the projected period, and to decline at a slower rate than in recent years. From the attraction's peak attendance shortly after the installation of the Spruce Goose in 1984, attendance has declined at an average rate of 9 percent per year. After the initial drop-off in attendance which commonly occurs several years after the addition of a major attraction, the attraction's decline has slowed somewhat with attendance decreases in recent years averaging about 3 percent per year. We have projected attendance to be stable in Year 1, decrease by 3 percent per year in Years 2 and 3, decrease 2 percent in Year 4, and decrease 1 percent thereafter. We feel this represents a reasonable attendance erosion profile reflecting an attraction with recovering markets but no reinvestment in major attractions.

The poor hotel market has also contributed to the weak performance of the complex causing declines in occupancies and room rates at the Hotel Queen Mary. We have, thus, projected a slow recovery in the hotel market, with increasing occupancies at the Hotel Queen Mary. Since 1981, hotel occupancies at the Queen Mary have risen and fallen, with an average occupancy during the period of 65 percent. We have projected occupancies to remain at estimated current levels of 50 percent for the first year, climbing to 55 percent in Year 2, 60 percent in Year 3, and 65 percent in Year 4 and thereafter.

### Economic Projections

#### Per Capita Expenditures and Room Rates

Projected per capita expenditures for the facility in Year 1 are shown in the text table below.

Admissions	\$13.04
Food	20.52
Merchandise	4.40
Other	<u>4.79</u>
Total	\$42.75

Admissions expenditures have been projected to be the same as the 1989 to 1991 average admission per capita. We have projected this level of admissions to remain stable for three years. This is to adjust for the fact that the attraction is currently overpriced, and will require several years of inflation for the price to be appropriate. The current overpriced situation is due in part to the fact that the Queen Mary complex raised prices at an average rate of 9 percent per year after the opening of the Spruce Goose, while other attractions raised prices an average of only 5 or 6 percent per year during the same period.

Food and merchandise expenditures have been projected to increase on an inflationary basis from current levels throughout the projection period. This accounts for the balancing factors of increasing hotel demand coupled with declining attraction demand, and general price increases. Other expenditures have been inflated on a per capita basis from 1989 through 1991 averages to account for broad fluctuations in certain of these years.

Room rates have been projected to remain at the current level of \$82 for Years 1 and 2, to reflect the soft hotel market. Room rates have been inflated at 3 percent per year thereafter.

#### Operating Revenues, Expenses, and Net Operating Income

The operating revenues, expenses, and net operating income for Option 5 are shown in Table IX-7. Operating revenues are estimated to equal some \$40 million in Year 1, expanding to \$47 million in Year 10. Overall this represents a level slightly less than current revenues during the first years of the projection period, increasing to historic average levels by about Year 5, and slightly surpassing historic levels by Year 10. This revenue stream accounts for declining attraction attendance, and a slowly recovering hotel business. The growth in revenues in real terms when accounting for inflation is actually negative, and reflects similar declines in real revenue growth of the Queen Mary/Spruce Goose complex under both Wrather and Disney management. Inflation in this option has been projected at a short-term rate of 3 percent (as opposed to 4 percent in Options 1 and 2) to reflect the short-term interim solution nature of this option.

**Table IX-7**  
**Projected Operating Revenues, Expenses and Operating Profit/Loss**

**Option 3 - Current Use**  
**(000's)**

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<b><u>REVENUES</u></b>										
Room Rentals	\$5,427	\$5,970	\$6,643	\$7,340	\$7,487	\$7,712	\$7,943	\$8,181	\$8,427	\$8,680
Admissions	\$10,432	\$10,119	\$9,816	\$9,908	\$10,103	\$10,302	\$10,505	\$10,712	\$10,923	\$11,138
Food and Beverage	\$16,414	\$16,399	\$16,385	\$16,539	\$16,864	\$17,197	\$17,535	\$17,881	\$18,233	\$18,592
Merchandise	\$3,519	\$3,515	\$3,512	\$3,545	\$3,615	\$3,686	\$3,759	\$3,833	\$3,908	\$3,985
Other	\$3,832	\$3,828	\$3,825	\$3,861	\$3,937	\$4,014	\$4,093	\$4,174	\$4,256	\$4,340
Gross Revenues	\$39,623	\$39,832	\$40,180	\$41,193	\$42,006	\$42,911	\$43,836	\$44,781	\$45,748	\$46,736
Less: Cost Goods Sold	\$6,683	\$6,677	\$6,671	\$6,734	\$6,867	\$7,002	\$7,140	\$7,281	\$7,424	\$7,570
Net Revenues	\$32,940	\$33,154	\$33,508	\$34,458	\$35,139	\$35,909	\$36,695	\$37,500	\$38,323	\$39,165
<b><u>DIRECT OPERATING EXPENSES</u></b>										
Labor	\$10,578	\$10,982	\$11,412	\$11,930	\$12,383	\$12,863	\$13,361	\$13,879	\$14,417	\$14,977
Non-Labor	\$9,200	\$9,591	\$10,005	\$10,496	\$10,891	\$11,309	\$11,743	\$12,193	\$12,662	\$13,148
Subtotal	\$19,778	\$20,572	\$21,417	\$22,426	\$23,274	\$24,171	\$25,103	\$26,072	\$27,079	\$28,125
<b><u>UNDISTRIBUTED EXPENSES</u></b>										
G & A	\$1,468	\$1,512	\$1,557	\$1,604	\$1,652	\$1,702	\$1,753	\$1,805	\$1,859	\$1,915
Repairs and Maint.	\$8,000	\$8,240	\$8,487	\$8,742	\$9,004	\$9,274	\$9,552	\$9,839	\$10,134	\$10,438
Credit Card Comm.	\$271	\$279	\$287	\$296	\$305	\$314	\$323	\$333	\$343	\$353
Utilities	\$2,477	\$2,551	\$2,628	\$2,707	\$2,788	\$2,872	\$2,958	\$3,047	\$3,138	\$3,232
Management Fee	\$1,585	\$1,593	\$1,607	\$1,648	\$1,680	\$1,716	\$1,753	\$1,791	\$1,830	\$1,869
Marketing	\$2,774	\$2,788	\$2,813	\$2,883	\$2,940	\$3,004	\$3,068	\$3,135	\$3,202	\$3,271
Subtotal	\$16,575	\$16,964	\$17,380	\$17,880	\$18,370	\$18,882	\$19,408	\$19,950	\$20,507	\$21,080
Operating Income/Loss	(\$3,412)	(\$4,382)	(\$5,288)	(\$5,848)	(\$6,505)	(\$7,144)	(\$7,816)	(\$8,522)	(\$9,263)	(\$10,040)

Source: Economics Research Associates.



Operating expenses have been projected using the same rationale as expressed in ERA's interim report. That is, we have accounted for typical variable and fixed expenses to adjust operating expenses downward in light of lower business volume, and adjusted operating expenses to industry standards where Disney operating expenses exceeded these standards (primarily in marketing, general and administrative expenses, cost of goods sold, and entertainment). Detailed operating expense assumptions are shown in the Appendix. Direct and undistributed operating expenses are projected to total some \$36 million in Year 1, expanding to \$49 million in Year 10. This level of operating expense assumes efficient and industry-standard operations of this facility by an experienced new operator. The expenses shown are somewhat less than those during the Disney years.

Given the above revenue and expense projections, we have projected net operating income at (\$3.4 million) in Year 1 declining to (\$10 million) by Year 10. While these operating losses are not as extreme as in current years, reflecting recovering markets and more efficient operations, they are still losses and indicate the fundamental product and market problems with this complex.

## OPTION 6 — LIMITED OPERATION

### Concept

ERA examined the option of continuing to operate the tour, but downscaling it considerably. Under this use option, the tour would consist of the Promenade Deck, Sun Deck and Sports Deck. In addition, the existing restaurants and retail shops would remain in operation. Tour attendees would not be able to go below the Promenade Deck and, therefore, would not see the working areas of the ship that are now open. The hotel would also be closed. This operating option assumes that a new operator would be found to manage the downscaled attraction. It also assumes that the Spruce Goose would be no longer on site.

The concept calls for mothballing all of the decks below the Promenade Deck in order to preserve the ship. This would entail one time costs on the order of \$1.4 million. Initially this use was considered as a means of retaining the ship and offering a scaled down tour while trimming maintenance costs.

### Comparable Projects

The only comparable for the limited tour option is the historical performance of the existing Queen Mary tour modified to reflect the scaled down nature of the limited tour concept.

The historical performance of the Queen Mary has been discussed in Section VI, and is briefly summarized here. The Queen Mary tour attendance was 808,000 during 1991. Tour attendance has been declining at a rate of about 9 percent a year since 1984. The rate of declining attendance has slowed in recent years and is averaging about 3 percent per year now. The complex produced operating income before capital expenditures during the Wrather years, but after deducting capital expenses has lost money in all but one year under Wrather. It has continued to decline under Disney management.

### Market Evaluation

The existing attraction draws from large tourist and resident market bases. The available markets consists of some 1.9 million overnight visitors to Long Beach, and overnight recreation-oriented visitors to the Los Angeles area and 11.3 million residents of the Los Angeles/Orange County region. These same markets would be available to a scaled down tour, although the attraction's ability to penetrate these markets would be reduced.

### Economic Projections

#### Attendance

The existing tour attracted approximately 808,000 visitors during 1991. A scaled down version of the tour would generate lower attendance due to the limited content and experience which would be provided. Attendance is projected at 640,000 for Year 1, which represents a 20 percent decrease from the current level of tour attendance. Attendance erosion is expected to continue, translating into a decline to 584,000 by Year 5 and approximately 555,000 in Year 10.

#### Per Capita Expenditures and Sales

Per capita expenditures in Year 1 for tour admission, food and beverage items and merchandise are shown below:

Admissions	\$ 4.86
Food/Beverage	11.25
Merchandise	3.00
Other	<u>1.25</u>
Total	\$ 20.36

These estimates are based on lowering of the adult admission price to \$6.95 to reflect the limited character of the tour. Per capita admission expenditures are estimated at \$4.86 in Year 1, accounting for children and group discounts. Food and beverage spending is

estimated at \$11.25 in the initial year. This is high for a short stay attraction, and takes into account the presence of the restaurants which would remain open to the general public. Merchandise expenditures have been reduced from current levels to account for the shorter length of stay.

### Revenues, Expenses and Net Operating Income

Based on the above factors, ERA has projected the operating economics of the limited tour. The following assumptions were utilized in our analysis:

1. Operating expenses and cost of goods sold are based on standard industry ratios adjusted to reflect the specific concept, historical expenses, and operating efficiencies derived by new management and lower business volume, with the exception of maintenance and utilities.
2. Maintenance and utilities are based on actual ship requirements established by ERA's engineering consultant (see Section VII). Annual maintenance expense assumes that the required deferred maintenance discussed earlier is performed.
3. A lower inflation rate (3 percent) has been utilized to reflect this use as an interim rather than long-range solution for the Queen Mary.

Our financial projections are provided in Table IX-8.

Gross revenues are projected at approximately \$13 million in the opening year and at slightly under \$15 million in Year 10. No real growth is indicated, due to the projected continued attendance erosion. Operating expenses including cost of goods sold are estimated at \$13.7 million in Year 1, increasing to \$18.2 by the tenth year. The limited tour is projected to sustain operating losses of nearly \$10 million in the initial year and reaching \$15 million by Year 10. Upon detailed examination, this option was not considered to be viable primarily due to the need to support high maintenance costs. It was determined that the maintenance costs would be about the same for the limited tour as for the entertainment

Table IX-8

**Projected Operating Revenues, Expenses  
and Operating Profit/Loss  
Option 4 - Partial Operation  
(000)**

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<b><u>REVENUES</u></b>										
Room Rentals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Admissions	\$3,110	\$3,108	\$3,105	\$3,134	\$3,196	\$3,259	\$3,323	\$3,388	\$3,455	\$3,523
Food and Beverage	\$7,200	\$7,194	\$7,187	\$7,255	\$7,398	\$7,543	\$7,692	\$7,843	\$7,998	\$8,155
Merchandise	\$1,920	\$1,918	\$1,917	\$1,935	\$1,973	\$2,012	\$2,051	\$2,092	\$2,133	\$2,175
Other	\$800	\$799	\$799	\$806	\$822	\$838	\$855	\$872	\$889	\$906
Gross Revenues	\$13,030	\$13,019	\$13,007	\$13,129	\$13,388	\$13,652	\$13,921	\$14,195	\$14,474	\$14,760
Less: Cost Goods Sold	\$3,120	\$3,117	\$3,114	\$3,144	\$3,206	\$3,269	\$3,333	\$3,399	\$3,466	\$3,534
Net Revenues	\$9,910	\$9,902	\$9,893	\$9,986	\$10,182	\$10,383	\$10,587	\$10,796	\$11,009	\$11,226
<b><u>DIRECT OPERATING EXPENSES</u></b>										
Labor	\$5,900	\$6,074	\$6,254	\$6,471	\$6,729	\$6,997	\$7,276	\$7,566	\$7,867	\$8,181
Non-Labor	\$4,700	\$4,839	\$4,982	\$5,155	\$5,360	\$5,574	\$5,796	\$6,027	\$6,267	\$6,517
Subtotal	\$10,600	\$10,913	\$11,236	\$11,626	\$12,089	\$12,571	\$13,072	\$13,592	\$14,134	\$14,697
<b><u>UNDISTRIBUTED EXPENSES</u></b>										
G & A	\$900	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305
Repairs and Maint.	\$4,853	\$4,999	\$5,149	\$5,303	\$5,462	\$5,626	\$5,795	\$5,969	\$6,148	\$6,332
Utilities	\$1,902	\$1,959	\$2,018	\$2,078	\$2,141	\$2,205	\$2,271	\$2,339	\$2,409	\$2,482
Management Fee	\$521	\$521	\$520	\$525	\$536	\$546	\$557	\$568	\$579	\$590
Marketing	\$912	\$911	\$910	\$919	\$937	\$956	\$974	\$994	\$1,013	\$1,033
Subtotal	\$9,088	\$9,420	\$9,658	\$9,918	\$10,201	\$10,492	\$10,791	\$11,099	\$11,416	\$11,742
Operating Income/Loss	(\$9,778)	(\$10,431)	(\$11,001)	(\$11,558)	(\$12,108)	(\$12,680)	(\$13,275)	(\$13,896)	(\$14,541)	(\$15,214)

Source: Economics Research Associates

center and card club. Therefore, it is more economically advantageous to generate higher levels of revenues through more intensive use of this deck space.

## **OPTION 7 — NON-OPERATING AND DISPOSITION OPTIONS**

Four non-operating options for the Queen Mary were explored. These are:

1. Mothballing
2. Sinking
3. Scrapping
4. Selling

Preliminary cost estimates for each of these alternatives are provided in the following paragraphs. These cost estimates were made based on the Rados International report dated January 15, 1992. Further investigation by Rados International as part of the current study has revealed several additional problems, most significant of which is related to asbestos-containing material. These may lead to increased costs due to removal of this material. The magnitude of the impact on the estimated costs related to the asbestos treatment are discussed under each alternative.

### **Mothballing Vessel**

Mothballing the ship would preserve it either on a short-term or long-term basis depending on the extent and process used. Mothballing would allow for the preservation of the vessel's exterior and interior. The mothballing option could preserve the vessel as an icon in Long Beach while eliminating most of the maintenance cost requirements. It could also be considered an interim solution which would allow the Port and City to defer making a final decision as to the ship's fate.

There are two methods of mothballing the interior. The passive method seals selected portions of the interior from exterior atmospheric changes and thus slows down corrosion of metal and aging of wood. This method does not protect the ship from cold and heat. Moisture could be controlled using silica gel canisters. The active method uses dry air to seal selected areas of the ship which is a requirement for long-term preservation. Because of the

space configuration, a combination of the passive and active would be preferred, according to Rados International.

The preservation of the exterior of the ship for long-term storage would require the cleaning and painting of the superstructure, hull and hull bottom.

The costs of mothballing the ship are summarized below:

Vessel Cleaning	\$ 81,000
Disconnect Services	22,000
Mothball (Dry Air Humidifiers)	<u>1,293,000</u>
Total	\$1,396,000

Mothballing will not require the removal of asbestos. Some protection for employees would be required during the mothballing process, but overall impact on costs would be low. A minimal annual maintenance cost would be required in this option consisting of primarily security and fire system maintenance. Estimated annual maintenance cost under this option would be some \$1 to \$2 million.

#### Sinking Vessel

The ship could be made into an artificial barrier reef, or simply sunk. If made into an artificial barrier reef, it could be used as a scuba dive area. It could also be used as a destination for tourist submarines in which case it could possibly generate some revenue and become an operational use.

There are established regulations pertaining to the sinking of vessels. The Department of Fish and Game would control the scuttling location and a permit from the Coastal Commission would be required to use the ship as an artificial reef depending on the location. If the ship was not able to be used as an artificial barrier reef, and were it to be sunk, a permit would be required from the Environmental Protection Agency.

The estimated cost of turning the Queen Mary into an artificial reef is \$4.7 million. The most significant cost would be an estimated \$3.8 million to remove the breakwater.



Some asbestos containment would be required if the ship were sunk and this would moderately impact costs.

Some of the costs might be recovered by auctioning valuable items with historical significance such as wood panelling and inlaid wood sculptures; furnishings and momentos from the ship, or selling other pieces of the Queen Mary as souvenirs in a well-situated merchandise shop.

### Scrapping Vessel

The Queen Mary contains 44,165 long tons of high-grade steel and 20 million rivets, piping, machinery valves, etc. The value of the steel, brass and copper scrap is estimated at \$884,000. Valuable items on the ship could also be auctioned. The cost of preparing the ship for scrapping (which includes removal of the breakwater) is estimated at \$4.8 million. In addition, the asbestos-containing material would have to be removed. While a detailed study has not been conducted, it is estimated that asbestos removal would cost on the order of \$5 million. Thus, scrapping the Queen Mary would carry total costs on the order of \$7 to \$9 million. This estimate does not take into consideration any monetary gain from the auction of Queen Mary valuables.

### Selling Vessel

There have been numerous inquiries to the Port from parties interested in possibly acquiring the Queen Mary. Rados International has estimated that the sales price for the Queen Mary could range from \$3.8 to \$4.5 million.

The major cost associated with selling the Queen Mary would derive from the removal of the breakwater which is estimated at almost \$3.8 million. However, selling of the vessel would necessitate the removal of some asbestos-containing material from the ship.

## OPTIONS FOR THE SPRUCE GOOSE

### Introduction

The consultant team also considered options for the Spruce Goose attraction. Our analysis of the Spruce Goose has not been as detailed as that of the Queen Mary for several reasons. First, the Spruce Goose does not have the same high maintenance requirements of the Queen Mary, and is thus not in the same financially precarious position.

A second and perhaps stronger reason is that the Port and City of Long Beach have little control over the ultimate location and operation of the Spruce Goose. The plane is owned by the Aero Club of Southern California. The Aero Club released a Request for Proposals in May 1992 to which it received six responses from parties interested in removing the Spruce Goose. The Aero Club is currently negotiating with three of these parties, and is not negotiating with the City or the Port. Additionally, under the terms of Disney's lease, Disney is obligated to remove the plane and the dome at the lease's termination. It is thus highly unlikely, without strong Port and/or City intervention, that the Spruce Goose will remain as an attraction in Long Beach. It is possible that Disney could be convinced to leave the dome. However, its fate in this case will be a function of the second phase masterplan, and whether or not it is advantageous to use the dome should it remain.

### Use Options

Despite the fact that the most probable option for the Spruce Goose is its departure, the team has reviewed potential use options for the facility, and performed a brief analysis of the facility should it remain as a stand-alone attraction. The potential uses developed by the team were outlined in Section VIII of this report, and to reiterate are: an aviation museum, use as on-shore space for the maritime museum concept described above in Option 4, a card club, a public recreation and aquatics center, a sports complex, and an indoor waterpark.

These uses were reviewed for the strength of their economic contribution to overall site maintenance requirements. The maritime museum, as discussed above, would not earn

sufficient income to pay for the maintenance costs of the ship. The aviation museum likewise would generate little income towards overall maintenance requirements. Both of these uses would be well suited to the space in the dome and should be considered if other surrounding development made it possible for nonprofit institutions to locate there.

Similarly, the public recreation and aquatics center, and the sports complex would be uses compatible with the physical space in the dome. However, these public uses typically break even at best, and often require subsidies. Additionally, such public recreation uses may be incompatible with other more commercial uses planned for the site area.

An indoor waterpark in the dome would benefit from the existing physical enclosure which tends to be one of the most expensive elements of an indoor waterpark. The size of the domed area is also appropriate for this use. However, indoor waterparks are typically developed in cold climates in inland areas to provide a warm swimming experience to an area which has none. This is clearly not the case in Southern California, where miles of beaches, surf, good weather, and existing outdoor waterparks would dampen the market opportunity for such a facility.

The card club option proves to be the most reasonable use for the Spruce Goose dome of those reviewed. The dome area is of sufficient size to develop a full-scale 150- to 200-table card club. Card club operators agreed that this would be a good location for a club. A large stand-alone card club at the Spruce Goose dome would face the same image and other challenges discussed previously, with the exception, of course, that the large space is readily available without need for structural modification. Based on our research of card clubs, it is our opinion that a large card club at the Spruce Goose could be very successful financially if it were approved. We would expect the performance of such a facility to rank with the more successful facilities in the Los Angeles area.

#### **Performance as a Stand-Alone Attraction**

Because the Spruce Goose is a very short length-of-stay facility with inherently low repeat visitation, its success as a stand-alone attraction is highly dependent on what takes

place in the surrounding development. It is difficult, therefore, to model the market and financial performance of such a facility in the absence of a detailed masterplan for the surrounding area. We have therefore indicated a range of stable-year performances at the facility which could be reasonably expected assuming the Queen Mary is no longer operational, but some other visitor-oriented activities take place on the site.

Under such conditions, and based on the historic performance of the complex, and performance of similar short length-of-stay attractions, we would expect the Spruce Goose to achieve annual attendance ranging from some 250,000 to 350,000 persons. This assumes a recommended admission price of \$6.95 for adults. Rough estimates of reasonably achievable per capita expenditures are shown in the text table below.

Admissions	\$4.86
Food and Beverage	1.25
Merchandise	2.00
Rental and Other	<u>1.75</u>
Total	\$9.86

Based on the above range of potential performance, and actual current staffing and operating costs for the Spruce Goose, a stable-year indication of potential income is shown in the text table below.

Gross Revenues	\$3,000,000
Operating Expense	
Labor	\$ 615,000
Nonlabor	800,000
Cost of Goods Sold	<u>540,000</u>
Total	\$1,955,000
Net Operating Income	\$1,045,000

Gross revenues were calculated by applying a a median level of attendance of 300,000 persons per year to per capita expenditures. Operating expenses were calculated

using actual current operating labor requirements, augmented to provide for marketing, financial, and general management labor currently being used jointly with the Queen Mary. An estimated staffing schedule with costs is shown in the appendix. Other operating costs were estimated based on budgets for similar modest-scaled attractions, Spruce Goose utility and maintenance requirements, and standard attraction industry ratios.

As indicated, the Spruce Goose may have the potential to be a profitable attraction on a stand-alone basis. This possibility would of course be increased were the surrounding property to be developed with compatible visitor-serving land uses. The facility has limited maintenance and staffing requirements, and thus could be operated fairly efficiently.

## Section X

### FINANCIAL FEASIBILITY OF SELECTED OPTIONS

As discussed in Section IX, only two alternative use options have been identified as potentially feasible from an operations standpoint i.e. operating income exceeds normal operating expenses including on-going ship maintenance costs. This section analyzes the ability of these two options to support the \$27 million deferred maintenance cost on the ship. Operations under current conditions (Option 5) are also examined to determine the subsidy level required under this option.<sup>1</sup>

#### METHODOLOGY

KRM constructed a computerized financial model to analyze the two use options. The model output is structured into four sections: assumptions statement, economic activity, fiscal revenues by category, and financial feasibility analysis. The model calculates the various impacts over a 30-year period on a zero inflation (primarily for fiscal revenue analysis) and 4 percent inflation basis. The detailed model runs are contained in the appendix.

For the Base Case, KRM utilized ERA's operating pro forma and current employment levels represented by Disney in order to estimate economic and fiscal impacts.

The financial feasibility analysis measures both before-financing and after-financing return on total capital and equity investment. Based on investment return criteria, the analysis determines the level of private investment that is supportable by the income generated under each option. This supportable investment is then compared to the required capital costs of each option. The analysis presented in this section assumes 4 percent annual inflation.

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<sup>1</sup> The reader will note that there are slight differences in certain individual items between ERA's operating statements and those projected by KRM. These are due to varying calculation mechanics, rounding, and varying time assumptions used by KRM for the purpose of fiscal and economic impact analysis. These differences are immaterial to the analysis.

## MAJOR ASSUMPTIONS

### Capital Costs

#### Deferred Maintenance

The Queen Mary has significant maintenance problems that have not been adequately addressed. Rados International Corporation has estimated the minimum investment required to bring the ship up to acceptable comfort and safety standards to be \$27.1 million, with almost \$6.0 million required on immediate items. In the pro forma analysis, the remaining \$21.1 million is assumed to be spent over three years following the immediate budget items.

#### Leasehold Improvements

To convert the Queen Mary into the proposed entertainment complex will require additional investment for refurbishing and improving the restaurants, ballrooms and gift shops. Rados has estimated the refurbishment cost to be \$4.8 million for the entertainment center (Option 1), and \$4.9 million if a card club is included (Option 2).

#### Start-Up Costs

In addition to the capital costs for physical improvements, substantial startup costs will be required for each option, including design, promotion, and other organizational costs. These costs are estimated to be in excess of \$1.0 million for each option.

In summary, the continued operation of the Queen Mary will require a significant capital investment, as follows:

**Capital Costs  
(\$ millions)**

	<u>Base Case "As Is"</u>	<u>Option 1 Entertainment Only</u>	<u>Option 2 Entertainment and Card Club</u>
Deferred Maintenance	\$27.1	\$27.1	\$27.1
Refurbishment	NA	4.8	4.9
Startup Costs	<u>NA</u>	<u>1.0</u>	<u>1.0</u>
Total	\$27.1	\$32.9	\$33.0

**Financing**

Due to the high risk operating nature of the use options, private debt financing would be likely subject to high underwriting standards. The analyses which include financing are based on a 1.5 debt coverage ratio at an average interest rate of 12 percent and a 15-year term. The remaining equity is assumed to require a 25 percent to 30 percent yield to attract investors. This is equivalent to an 18 percent to 20 percent return on an all cash investment, which is 5 percent to 6 percent above institutional quality real estate investment thresholds and, in our opinion, is reasonable for these types of uses.

**Land Lease Payments**

An additional factor in establishing the viability of alternative use operations is the project's ability to generate sufficient income to pay the Port of Long Beach a market rate of return on the 45 acres of land (exclusive of water area) current utilized by the Queen Mary project. Discussions with Port officials indicate that the land would have a minimum value of \$12 per square foot for industrial uses to as high as \$30 or more per square foot for commercial uses.



Using an initial 10 percent return on land value, consistent with Port policy, the Queen Mary operation would need to generate \$2.3 million in additional operating income to pay reasonable land rent based on the minimum industrial land value (45 acres x 43,560 square feet/acre x \$12/square foot x 10 percent). The analysis also incorporates percentage lease terms based on current Port guidelines in the detailed projections (5 percent of gross revenues of retail, entertainment, and other revenues; 3 percent of gross food and beverage revenues).

#### **FINANCIAL ANALYSIS — MINIMUM PORT LAND LEASE**

KRM analyzed the Base Case together with the two selected options incorporating the required capital improvements, land lease payments and financing costs. The results are summarized in the text table below for the stabilized operating year.

##### **Stabilized Pro Forma (1992\$ 000s)**

	<u>Base Case "As Is"</u>	<u>Option 1 Entertainment Center</u>	<u>Option 2 Entertainment and Card Club</u>
Net Operating Income - 1996	(\$ 5,000)	\$ 1,800	\$ 7,100
Less: Land Lease Payments	<u>2,300</u>	<u>2,300</u>	<u>2,300</u>
Net Income Before Debt Service	(\$ 7,300)	(\$ 500)	\$ 4,800
Supportable Debt	\$ 0	\$ 0	\$22,000
Required Equity	27,100	32,900	11,000
Pre-Financing Internal Rate of Return	NM <sup>1</sup>	(3.9%)	21.3%
Required Front-End Subsidy to Generate Return on Investment	NM <sup>1</sup>	\$23,000-24,000	NA

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<sup>1</sup>Not measurable.

The Base Case shows such a significant and increasing annual deficit that no front-end subsidy would make it a feasible operation. However, over a 30-year time period, a front-end subsidy of about \$100 million would be needed for this option just to fund the present value of the projected operating losses.

Option 1 requires a \$23-24 million front-end subsidy to represent a feasible project. Put another way, Option 1 would support an initial private capital investment of \$9-10 million of the \$33 million required investment.

Option 2 generates sufficient cash flow to fund all capital improvements and pay minimum ground rent. With expected inflationary increases, the Option 2 project should also be able to pay additional ground rent or a potential modest tax on gaming revenue.

#### Financial Analysis — No Land Lease Payments

For purposes of illustration only, KRM also analyzed the viability of the Base Case and Option 1 alternatives to assess whether elimination of land rent to the Port as an operating subsidy would support total private funding of capital costs.

#### Stabilized Pro Forma (1992\$ 000s)

	Base Case "As Is"	Option 1 Entertainment Center
Net Operating Income - 1996	(\$5,000)	\$ 1,800
Less: Land Lease Payments	-0-	-0-
Net Income Before Debt Service	(\$5,000)	\$1,800
Supportable Debt	\$ -0-	\$8,000
Required Equity	27,100	24,900
Pre-Financing IRR	NM <sup>1</sup>	7.8%
Required Front-End Subsidy to Generate Acceptable Return on Investment	NM <sup>1</sup>	\$11-12,000

<sup>1</sup>Not measurable.

As indicated, the Base Case still does not support any level of private investment since continuing cash flow deficits are generated by the operation.

Option 1 now generates some positive income such that \$8.0 million in debt financing is supportable. However, the rate of return on invested capital is below acceptable levels, and a front-end subsidy of \$11-12 million still would be required to generate acceptable returns.

## Section XI

### ECONOMIC AND FISCAL IMPACTS

In this section, the economic and fiscal impact of the Queen Mary complex on the City of Long Beach is discussed. The economic and fiscal impact has been determined for the operations of an entertainment center on the ship (Option 1), an entertainment center with a card club (Option 2), and under current operating conditions. Economic impact has been measured in terms of direct and indirect impact, and jobs created. The analysis is based upon the alternative development programs and operating assumptions developed by ERA coupled with ratios of taxes and economic conversion tables developed by KRM to generate direct and indirect economic and fiscal revenue impacts.

#### TOTAL ECONOMIC IMPACT

##### Analysis Assumptions

Estimation of total economic impacts takes into account various inter-industry relationships and the impact of re-spending of direct economic impacts on total output, earnings and employment. The method used to determine such impacts is based on an input-output model which traces the impact of a dollar in direct spending multiplied, or total output, earnings, and employment (i.e. a dollar of direct output in any industry will be spent for wages and salaries, equipment and services, etc., which will result in subsequent rounds of spending by the recipients of these monies which will produce further rounds of spending in the economy). The sum of all the recycling of expenditures is commonly referred to as indirect economic impacts. Indirect economic activity was estimated by the Southern California Planning Model (SCPM) and was utilized to derive estimates of selected indirect fiscal impacts. Other analysis assumptions are shown in the Appendix.

### Analysis Results

The summary of estimated total economic impacts of the Queen Mary complex is shown in Table XI-1. The economic impact is shown on a stable year basis. As indicated, the direct spending generated by Queen Mary operations generates substantial total economic impacts under all three scenarios. Total expenditure impact is estimated at some \$50 million per year under current operating conditions, \$41 million per year under the entertainment center operating option (Option 1), and over \$62 million per year under the entertainment center with card club option (Option 2). While operating under current conditions is clearly unprofitable, the level of expenditures which the ship generates, nevertheless, produces a substantial economic impact.

The Queen Mary complex also generates a high level of employment under all three operating options. Direct and indirect employment generated by the complex is estimated at some 1,100 jobs under the current operations scenario, approximately 600 jobs with the entertainment center option (Option 1), and some 840 jobs were the ship to be operated as an entertainment center with a card club (Option 2). It should be pointed out that the jobs shown under current operations include part time and seasonal jobs. The total employment impact is thus not totally comparable to Options 1 and 2 (the employment impact in Options 1 and 2 are full time employee equivalents).

### FISCAL REVENUE IMPACTS

#### Analysis Assumptions

The revenue impacts to the City of Long Beach will be offset to some extent by costs of municipal services associated with the project. No allowance for costs has been estimated for this analysis.

The development and operation of Queen Mary will result in substantial revenues to local agencies. The vast majority of all impacts fall into four categories:

1. Hotel taxes (transient occupancy taxes) on hotel business generated by Queen Mary visitors.
2. Sales taxes on guest expenditures for food, beverage and merchandise sold in the entertainment center, hotels and retail facilities.

3. Property taxes generated by the new construction.
4. Utility taxes and license fees collected by the City on power, water, telephone and other utility user charges, and business license fees.

The analysis excludes a variety of other fees and taxes that would generate additional revenue to the City, and assumes that other one-time fees (for example, various building permit and inspection fees), City enterprise activities and other development fees either are not impacted directly by the project or are revenue neutral (revenues offset by additional municipal costs). The analysis excludes consideration of potential revenue from possible taxes such as a gaming tax on card club revenues. Other cities in Southern California with card club facilities have gaming taxes at rates ranging from 7 percent to 14 percent of defined gross revenues.

#### Other Technical Assumptions

Except where explicitly noted, all dollar figures presented in this section are stated in 1992 dollars (i.e. assuming no inflation). Numbers referenced as "adjusted for inflation" assume a 4% annual rate of inflation. The analysis assumes that existing tax policies and rates will continue for the indefinite future.

Operating assumptions and detailed projections at 0 percent and 4 percent inflation, respectively, are in the Appendix.

#### Sources of Impact

The analysis distinguishes between fiscal revenue impacts according to the source of investment or spending which generates the impact, as follows:

1. Direct Impacts - Revenue impacts generated directly from the investment or from guest spending at Queen Mary facilities.
2. Induced Impacts - Revenue impacts resulting from expenditures generated by Queen Mary visitors in local hotel and retail establishments.
  - a. For both alternative options, KRM estimated annual demand of 40,000 hotel room-nights by non-local Queen Mary visitors based on ERA's data.

- b. Daily spending was estimated at \$80 per occupied room-night and \$40 for additional local retail expenditures.
  - c. For the Base Case, hotel demand was assumed to be absorbed by the Queen Mary Hotel.
  - d. Induced retail demand was estimated at \$10 per room-night in other Long Beach retail establishments.
3. Indirect Impacts - Multiplied impacts on fiscal revenues from recycling of expenditures in the City of Long Beach.

### Analysis Results

Based on the above assumptions, the fiscal impact of the three operating scenarios analyzed for the Queen Mary is shown in the text table below.

	Base Case "As Is"	Option 1 Entertainment Only	Option 2 Entertainment Only
Fiscal Impacts (millions)			
Direct Revenues from Queen Mary	\$1.00	\$.48	\$.51
Induced Revenues in Long Beach	.01	.31	.31
Indirect Revenues	<u>.05</u>	<u>.04</u>	<u>.06</u>
Total	\$1.06	\$ .84	\$ .88

As indicated, even though operations under current conditions are unprofitable, its top line revenue generation produces the highest fiscal impact of the three alternative operating scenarios. Fiscal impact for this option is roughly \$1 million per year. The entertainment center with the card club generates the second highest fiscal impact at about \$900,000 per year. Finally, the smallest operation from a gross revenue standpoint, the entertainment center, produces an annual fiscal impact of some \$800,000.

### Cumulative Impact on Fiscal Revenue

Over a 30-year period, the alternative Queen Mary use options will generate \$27-29 million in fiscal revenue to the City of Long Beach, slightly less than the current use

due to the impact of elimination of the Queen Mary Hotel. Assuming 4% inflation, total fiscal revenue ranges from \$44-\$47 million. The present value of 30-year fiscal revenues ranges from \$11.1-\$11.9 million for the two optional use configurations, compared to \$14.3 million estimated for the current Base Case use.

	<u>Millions</u>		
	<u>Base Case</u>	<u>Option 1</u>	<u>Option 2</u>
	<u>"As Is"</u>	<u>Entertainment</u>	<u>Entertainment</u>
		<u>Only</u>	<u>Only</u>
Annual Fiscal Revenue (1992\$)	\$ 1.0	\$ .83	\$ .88
30-year Total	32.0	27.2	28.8
30-year Inflated Total <sup>1/</sup>	56.8	44.0	47.0
Net Present Value at 9%	14.3	11.1	11.9

1/ At 4% annual inflation.



**Table XI-1**  
**ECONOMIC IMPACT IN LONG BEACH**  
**(Stabilized Year—1992\$)**

	<b>Base Case "As Is"<sup>1</sup></b>	<b>Option 1 Entertainment Only</b>	<b>Option 2 Entertainment and Card Club</b>
<b><u>Expenditure Impacts</u> (millions)</b>			
Direct Spending at Queen Mary	\$39.6	\$29.4	\$46.9
Induced Spending in Long Beach	1.0	4.4	4.4
Indirect Economic Activity	<u>9.5</u>	<u>7.4</u>	<u>11.3</u>
Total	\$50.1	\$41.2	\$62.6
<b><u>Employment Impacts</u></b>			
Direct Jobs at Queen Mary	985 <sup>2</sup>	403	603
Induced Jobs in Long Beach	25	115	115
Indirect Jobs	<u>104</u>	<u>80</u>	<u>123</u>
Total	1,114	598	841

<sup>1</sup>Base Case includes Londontown impacts which are excluded from other options.

<sup>2</sup>Direct jobs are as reported by Walt Disney Company and include parttime and seasonal employees.

Source: Kotin, Regan & Mouchly.

Los Angeles  
San Francisco  
San Diego  
Chicago  
Boston  
Washington, D.C.  
Fort Lauderdale

**ANALYSIS OF QUEEN MARY/  
SPRUCE GOOSE COMPLEX**

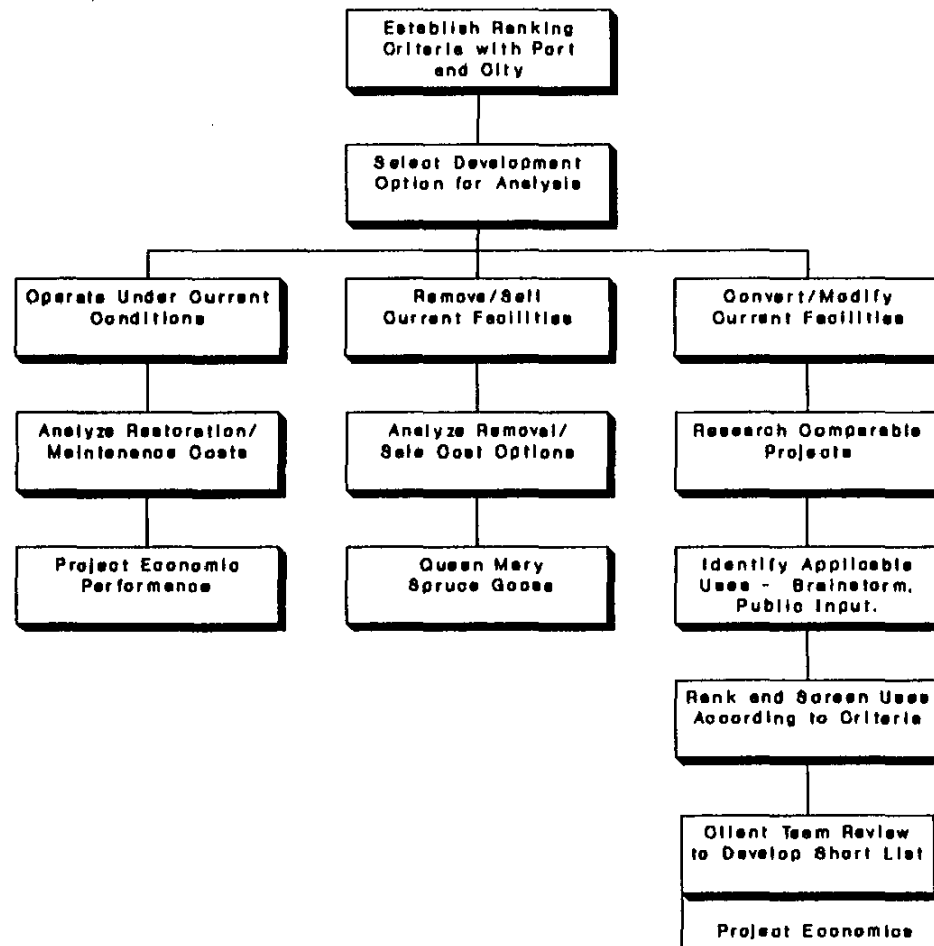
**PREPARED FOR THE  
PORT OF LONG BEACH  
AND  
CITY OF LONG BEACH**

**PREPARED BY  
ECONOMICS RESEARCH ASSOCIATES  
IN ASSOCIATION WITH  
KOTIN, REGAN & MOUCHLY**

**JUNE 1992**

**ERA PROJECT NO. 10518**

# METHODOLOGY



Source: Economics Research Associates

# **Screening Criteria**

- 1. Physical Compatibility with the Space Available on the Ship/in the Dome**
- 2. Market Demand for the Use**
- 3. Operating Income Potential**
- 4. Revenue Potential to the City/Port**
- 5. Development Cost and Space Modifications Requirement**
- 6. Compliance with State Tidelands and Other Regulatory Guidelines**
- 7. Overall Rating by Consultant Team**
- 8. Public Acceptance of the Use**

**Source: Economics Research Associates**

## Short List

1. An entertainment center combining restaurants, retail, and themed entertainment venues
2. A card club/casino
3. A timeshare development
4. A Maritime Museum combined with an aquarium onshore
5. Base Case -- operate under current conditions (assuming the hotel is open and the Spruce Goose stays)
6. Partial Use -- mothball the lower decks and retain a limited tour, restaurants, and retail, on the Promenade, Sun, and Sports decks
7. Mothball -- mothball the entire ship but retain it as an icon
8. Disposition -- dispose of the ship by sinking, selling, or scrapping.

Source: Economics Research Associates

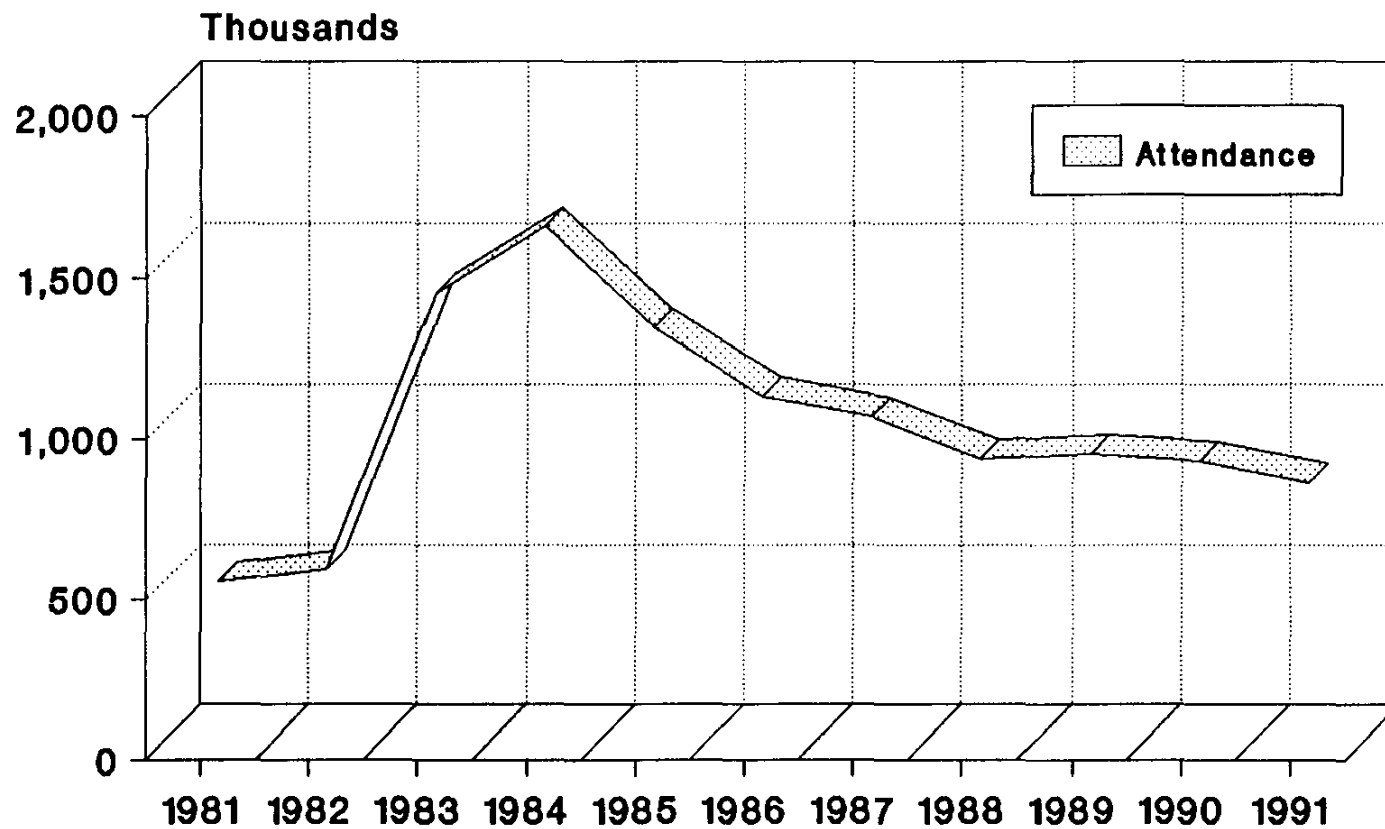
# Short List

<b>1. Entertainment Center</b>	<b>Infeasible</b>
<b>2. Entertainment Center/ Card Club</b>	<b>Feasible</b>
<b>3. Timeshare Development</b>	<b>Infeasible</b>
<b>4. Maritime Museum/Aquarium</b>	<b>Infeasible</b>
<b>5. Base Case</b>	<b>Infeasible</b>
<b>6. Partial Use</b>	<b>Infeasible</b>
<b>7. Mothball</b>	<b>Feasible</b>
<b>8. Disposition</b>	<b>Feasible</b>

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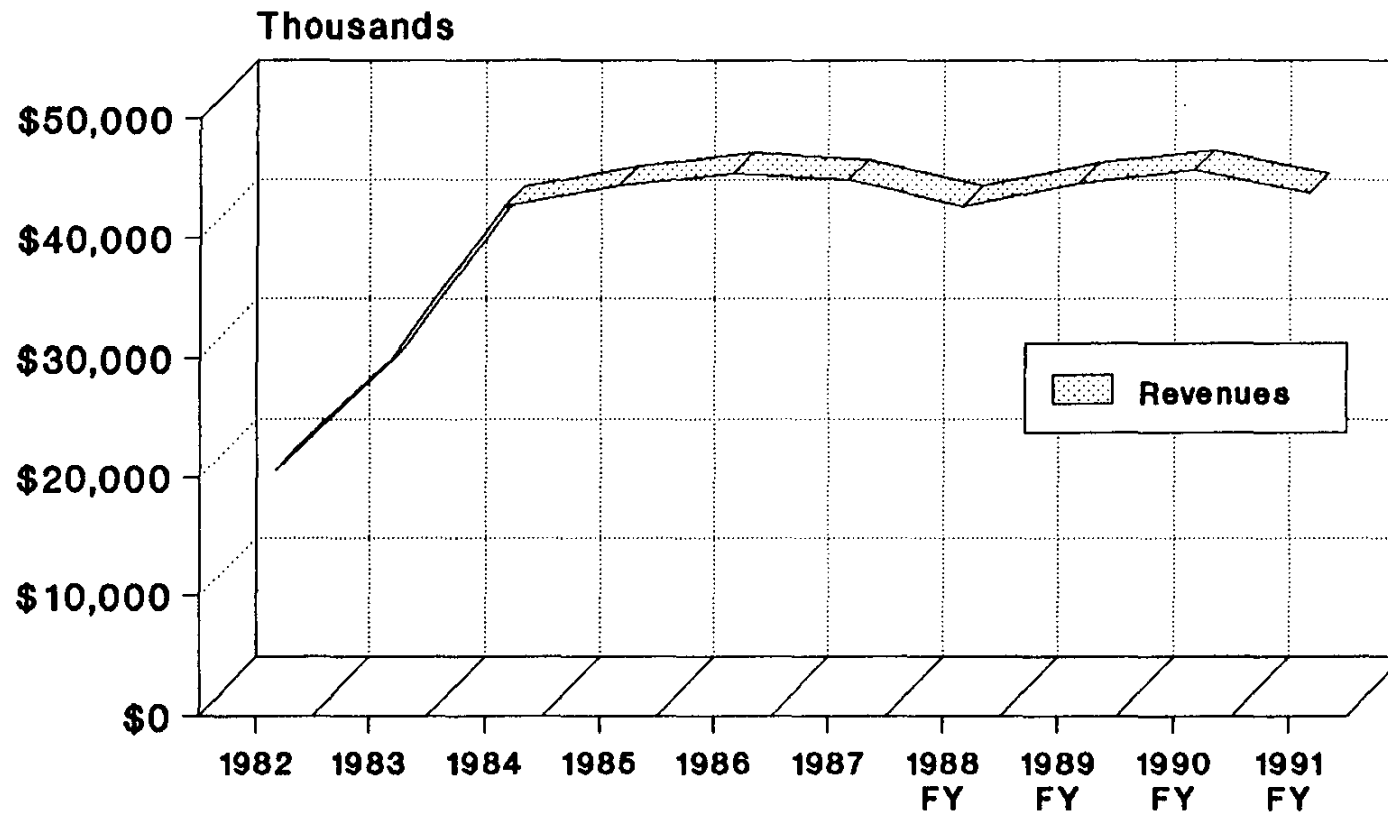
**Source: Economics Research Associates**

# Queen Mary/Spruce Goose Historical Attendance



Source: Walt Disney Company,  
Port of Long Beach & ERA

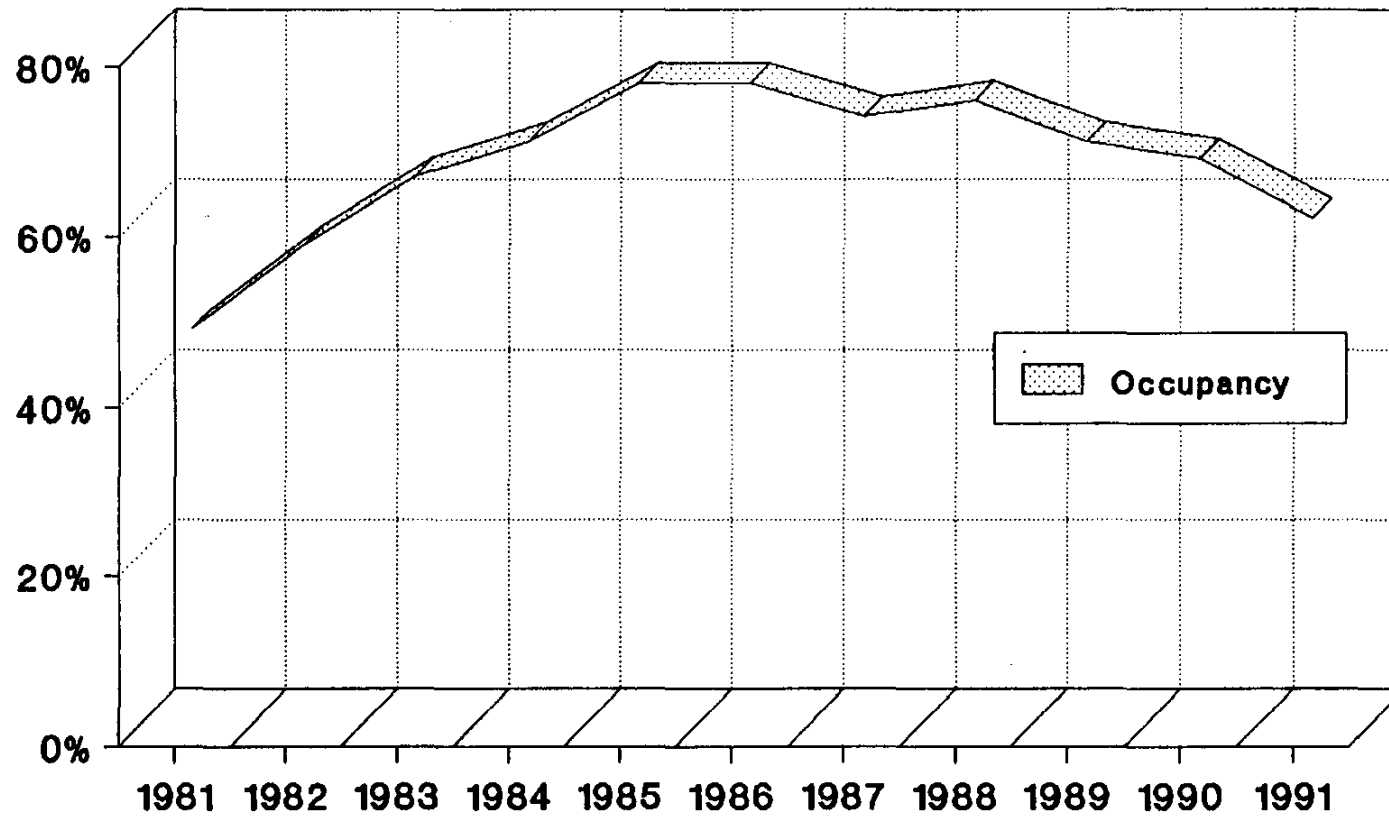
# Queen Mary/Spruce Goose Historical Revenues



Source: Walt Disney Company,  
Port of Long Beach & ERA

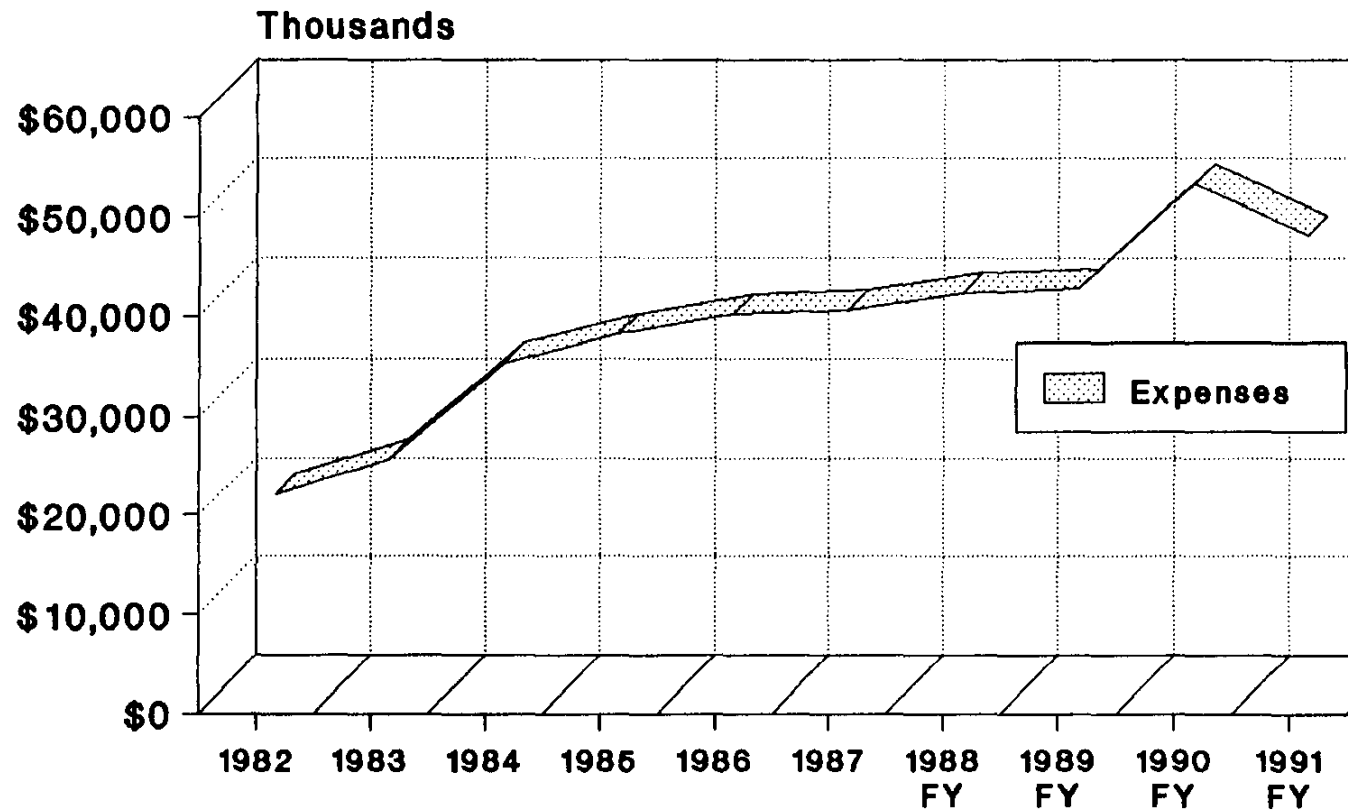


# Queen Mary Historical Occupancy



Source: Walt Disney Company, Pannell  
Kerr Forster, Port of Long Beach, & ERA

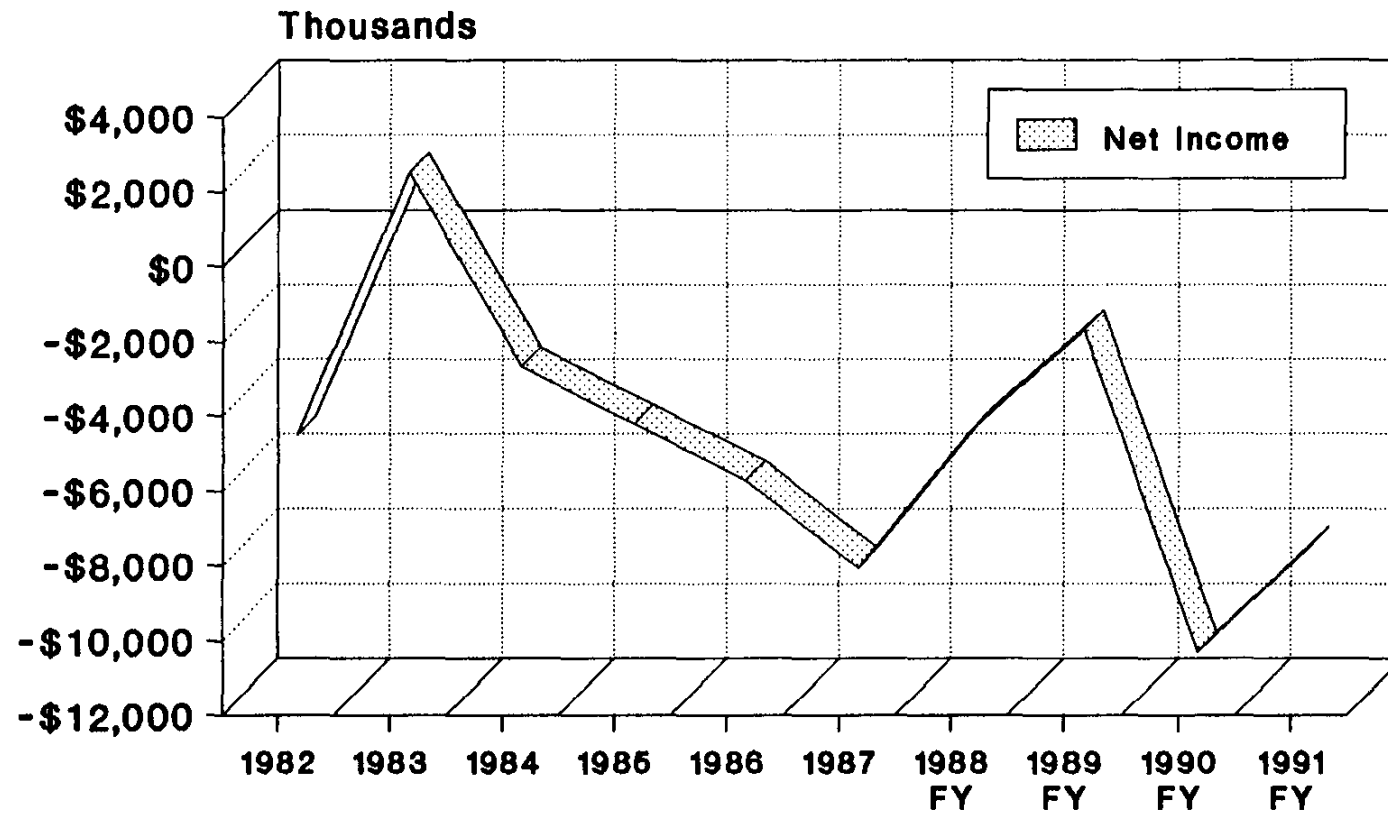
# Queen Mary / Spruce Goose Historical Operating Expenses



Source: Walt Disney Company,  
Port of Long Beach & ERA

# Queen Mary/Spruce Goose

## Historical Net Operating Income

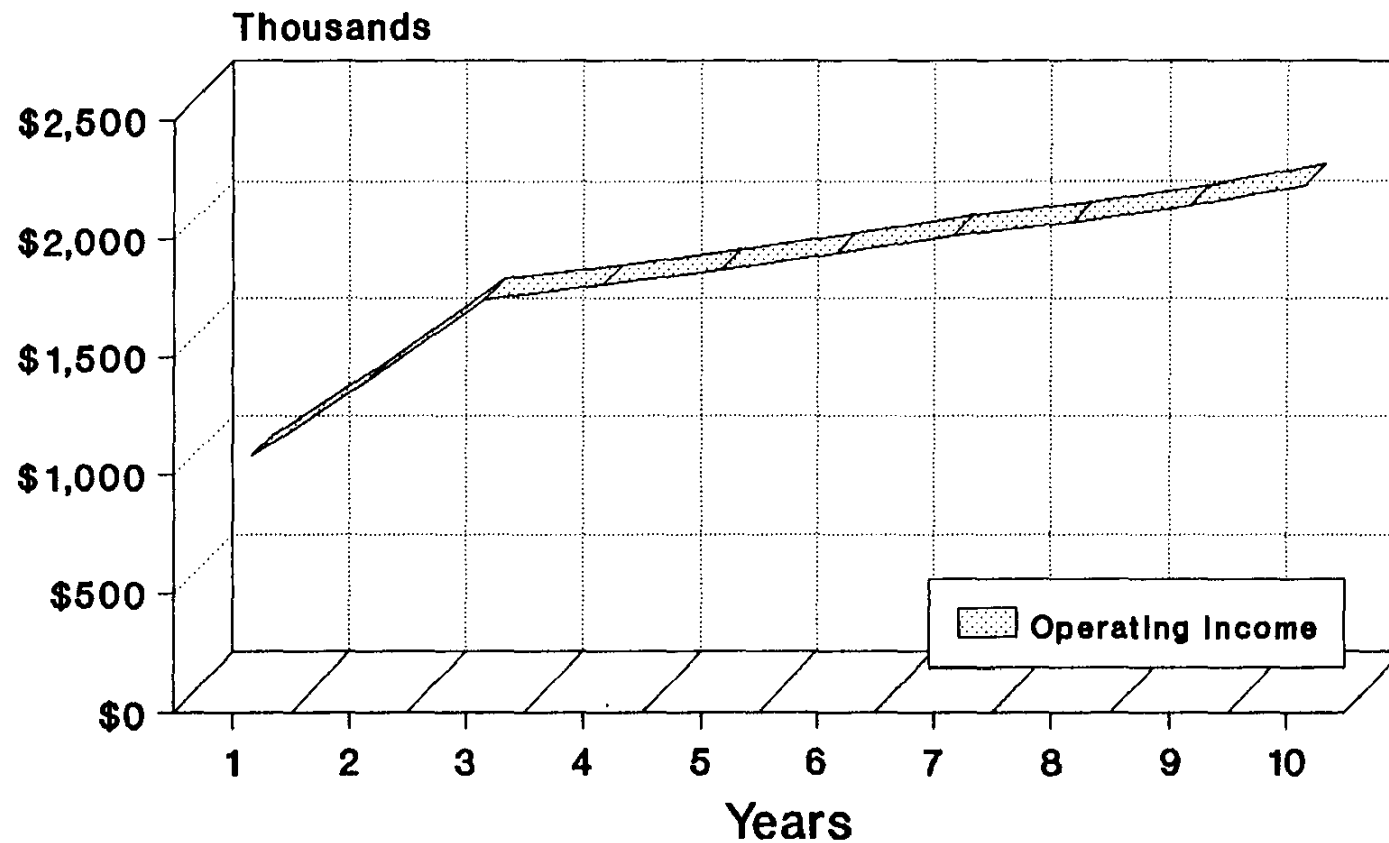


Source: Walt Disney Company,  
Port of Long Beach & ERA

# OPTION 1 - ENTERTAINMENT CENTER

## Projected Income

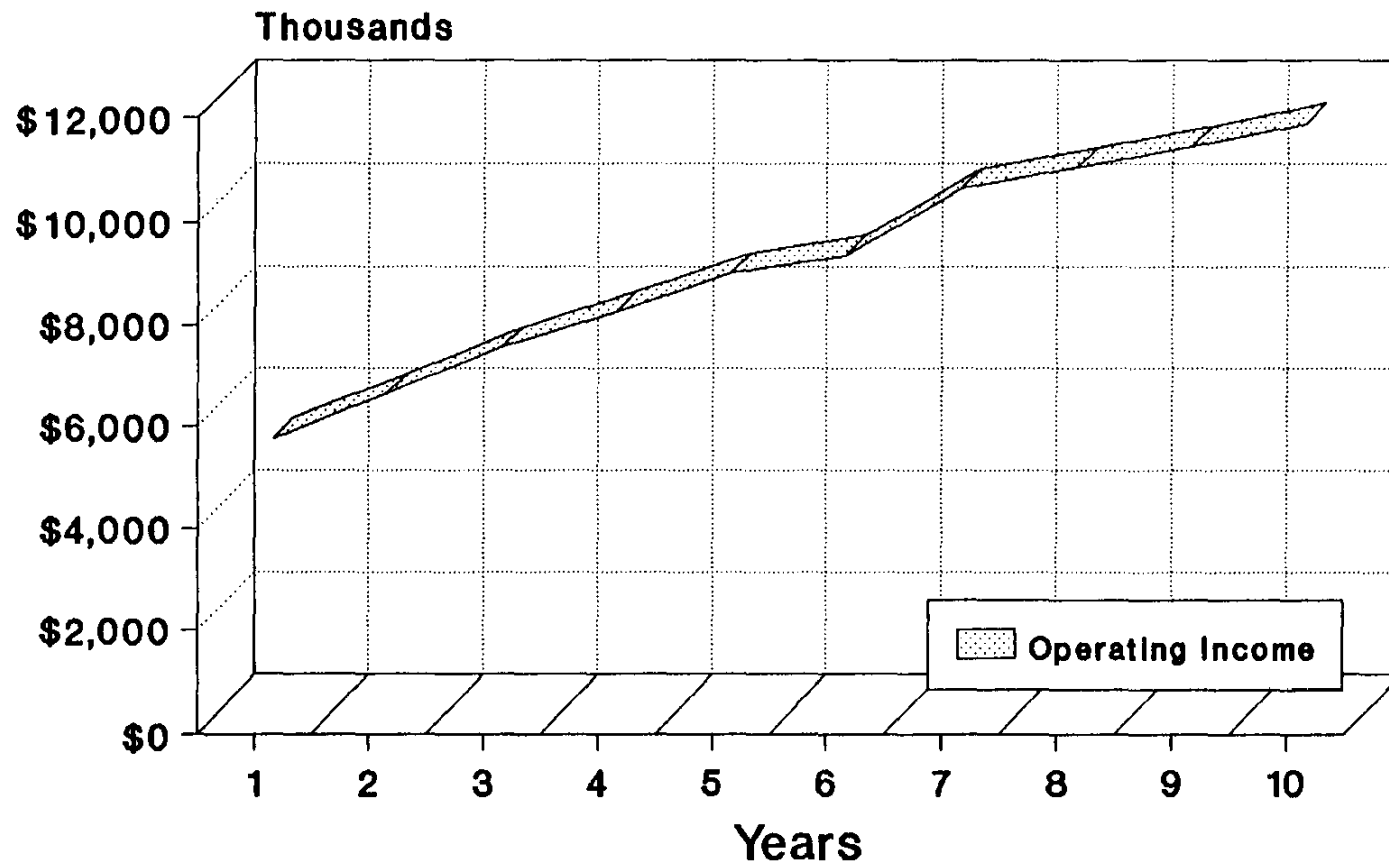
(000)



Source: Economics Research Associates

## OPTION 2 - ENT. CENTER / CARD CLUB

### Projected Income (000)

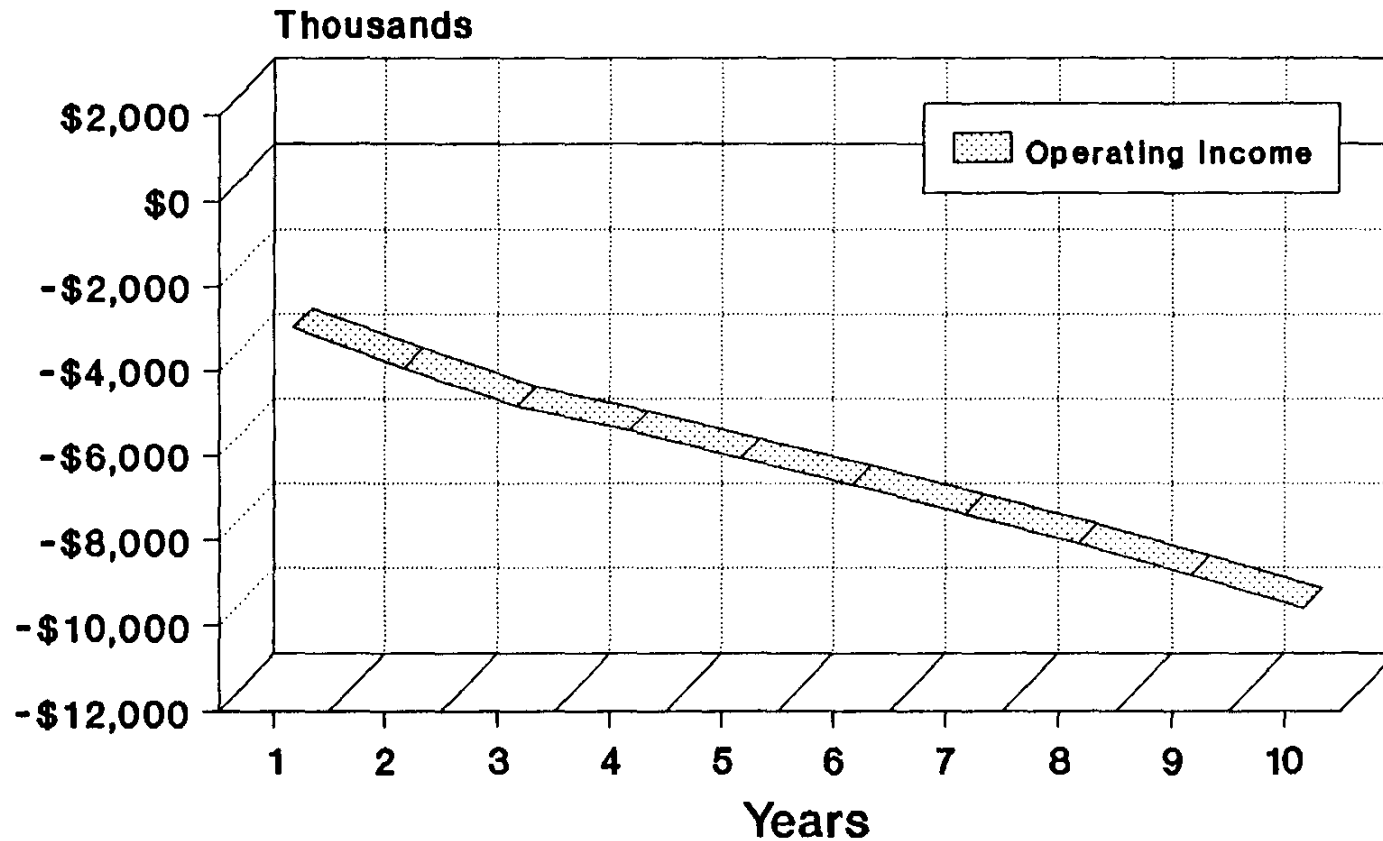


Source: Economics Research Associates

# OPTION 5 - CURRENT OPERATIONS

## Projected Income

(000)

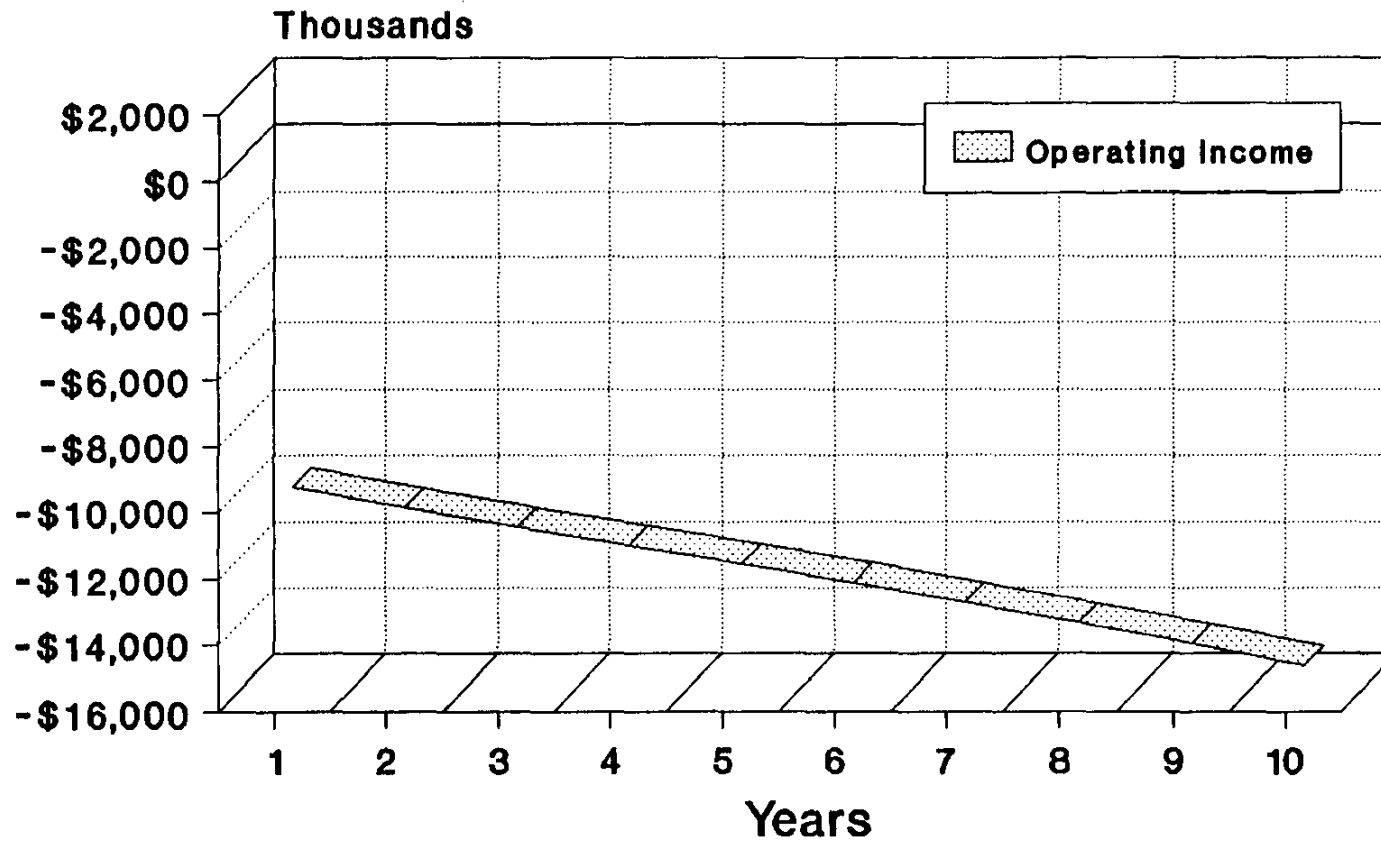


Source: Economics Research Associates

# OPTION 6 - PARTIAL OPERATIONS

## Projected Income

(000)



Source: Economics Research Associates

# Stabilized Pro Forma 1992\$ (in 000's)

	<u>Option 1</u>	<u>Option 2</u>
N.O.I. - 1996	\$ 1,800	\$ 7,100
Less: Land Lease Pmts	<u>\$ 2,300</u>	<u>\$ 2,300</u>
Net Inc. Before Debt	(\$ 500)	\$ 4,800
Supportable Debt	\$ -0-	\$22,000
Required Equity	\$32,900	\$11,000
Pre-Financing IRR	(3.2%)	(21.3%)
Required Front-End to Generate ROI	\$23K to \$24K	N.M.

—  
Source: ERA & KRM



# Non Operating / Disposition Options

## OPTIONS

## COSTS

- |             |                 |
|-------------|-----------------|
| 1. Mothball | - \$1.4 million |
| 2. Sink     | - \$5.0 million |
| 3. Scrap    | - \$8.0 million |
| 4. Sell     | - \$4.0 million |

Source: Economics Research Associates

# Stabilized Pro Forma 1992\$

(in 000's)

	<u>Base Case "As Is"</u>
Net Operating Income - 1996	(\$ 5,000)
Less: Land Lease Payments	<u>\$ 2,300</u>
Net Income Before Debt Service	(\$ 7,300)
Supportable Debt	\$ -0-
Required Equity	\$27,000
Pre-Financing IRR	Not Measurable
Required Front-End Subsidy to Generate Return on Investment	Not Measurable

Source: ERA & KRM

# Economic Impact in Long Beach

(Stabilized Year - 1992\$)

## Base Case "As Is"

### EXPENDITURE IMPACTS (000's)

- Direct Spending @ Queen Mary	\$39,600
- Induced Spending in L.B.	\$ 1,000
- Indirect Economic Activity	<u>\$ 9,500</u>
Total	\$50,100

### EMPLOYMENT IMPACTS

- Direct Jobs at Queen Mary	985
- Induced Jobs in L.B.	25
- Indirect Jobs	<u>104</u>
Total	1,114

—  
Source: ERA & KRM

# Fiscal Impact in Long Beach

(Stabilized Year - 1992\$)

## Base Case "As Is"

### FISCAL IMPACTS (000'S)

- Direct Revenues from Queen Mary	\$ 1,000
- Induced Revenues in L.B.	\$ 10
- Indirect Reveues	<u>\$ 50</u>
Total	\$ 1,060

—  
Source: ERA & KRM

# Economic Impact in Long Beach

(Stabilized Year - 1992\$)

	<u>Option 1</u>	<u>Option 2</u>
EXP IMPACTS (000'S)		
- Direct Spending	\$29,400	\$46,800
- Induced Spending	\$ 4,400	\$ 4,400
- Indirect Activity	<u>\$ 7,400</u>	<u>\$11,300</u>
Total	\$41,200	\$62,500
EMPLOYMENT IMPACTS		
- Direct Jobs	403	603
- Induced Jobs	115	115
- Indirect Jobs	<u>80</u>	<u>123</u>
Total	598	841

—  
Source: ERA & KRM

# Economic Impacts in Long Beach

(Stabilized Year - 1992\$)

	<u>Option 1</u>	<u>Option 2</u>
FIS. IMPACTS (000's)		
- Direct Revenues	\$ 480	\$ 510
- Induced Revenues	\$ 310	\$ 310
- Indirect Revenues	<u>\$ 40</u>	<u>\$ 60</u>
Total	\$ 830	\$ 880

Source: ERA & KRM

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**VOLUME II  
RESEARCH APPENDIX**

**PREPARED FOR THE  
PORT OF LONG BEACH  
AND  
CITY OF LONG BEACH**

**PREPARED BY  
ECONOMICS RESEARCH ASSOCIATES  
IN ASSOCIATION WITH  
KOTIN, REGAN & MOUCHLY**

**JUNE 1992**

**ERA PROJECT NO. 10518**

10990 Wilshire Boulevard, Suite 1600, Los Angeles, California 90024  
(310) 477-9585 Telex: 857861 (ECON RES LA) Fax: (310) 478-1950



**Table A-1**  
**LOS ANGELES/ORANGE COUNTIES**  
**POPULATION PROFILE**

**Population Growth Trends**

1980	9,410,000
1990	11,274,000
1992 (estimated)	11,628,000
1997 (projected)	12,527,000
<b>Average Annual Growth Rate</b>	
1980-1990	1.8%
1990-1997	1.5%

**1990 Population Characteristics**

Percent Male	50.0%
Percent Female	50.0%
 Number of Households	 3,817,000
 Average Household Size	 2.90
<b>Ethnic Composition</b>	
White	61.5%
Black	9.2
American Indian	0.5
Asian/Pacific Islander	10.7
Other	<u>18.1</u>
Total	100.0%
 Hispanic Origin	 34.7%

**Source: Urban Decision Systems and Economics Research Associates.**

**Table A-2**

**LOS ANGELES/ORANGE COUNTY  
AGE GROUP DISTRIBUTION**

<u>Age Category</u>	<u>Percent</u>
Less than 6 Years	9.7%
6 - 13	10.9
14 - 17	5.3
18 - 24	12.4
25 - 34	19.9
35 - 44	15.2
45 - 64	17.0
65+	<u>9.6</u>
Total	100.0%

**Median Age — 30.8**

**Source: Urban Decisions Systems and Economics Research Associates.**

**Table A-3**  
**LOS ANGELES/ORANGE COUNTY**  
**INCOME DISTRIBUTION**  
**1990**

<u>Income Category</u>	<u>Percent</u>
Under \$10,000	13.9%
\$10,000-\$14,999	9.2
\$15,000-\$19,999	8.4
\$20,000-\$24,999	8.1
\$25,000-\$34,999	13.7
\$35,000-\$49,999	16.2
\$50,000+	<u>30.5</u>
Total	100.0%

Median Household Income — \$32,437

Source: Urban Decisions Systems and Economics Research Associates.

Table A-4 Selected Population and Housing Characteristics: 1990  
Long Beach city, California

The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991. The user should note that there are limitations to many of these data. Please refer to the technical documentation provided with Summary Tape File 1A for a further explanation on the limitations of the data.

Total population	429,433	Total housing units	170,388
SEX		OCCUPANCY AND TENURE	
Male	216,685	Occupied housing units	158,975
Female	212,748	Owner occupied	65,117
		Percent owner occupied	41.0
AGE		Renter occupied	93,858
Under 5 years	37,669	Vacant housing units	11,413
5 to 17 years	71,798	For seasonal, recreational, or occasional use	442
18 to 20 years	21,834	Homeowner vacancy rate (percent)	1.7
21 to 24 years	35,365	Rental vacancy rate (percent)	7.4
25 to 44 years	153,939	Persons per owner-occupied unit	2.55
45 to 54 years	35,043	Persons per renter-occupied unit	2.65
55 to 59 years	13,552	Units with over 1 person per room	26,213
60 to 64 years	13,770		
65 to 74 years	26,000	UNITS IN STRUCTURE	
75 to 84 years	15,037	1-unit, detached	68,895
85 years and over	5,426	1-unit, attached	8,048
Median age	30.0	2 to 4 units	24,738
Under 18 years	109,467	5 to 9 units	20,039
Percent of total population	25.5	10 or more units	44,257
65 years and over	46,463	Mobile home, trailer, other	4,411
Percent of total population	10.8		
HOUSEHOLDS BY TYPE		VALUE	
Total households	158,975	Specified owner-occupied units	51,168
Family households (families)	93,913	Less than \$50,000	514
Married-couple families	65,502	\$50,000 to \$99,999	1,905
Percent of total households	41.2	\$100,000 to \$149,999	6,111
Other family, male householder	7,724	\$150,000 to \$199,999	11,626
Other family, female householder	20,687	\$200,000 to \$299,999	19,334
Nonfamily households	65,062	\$300,000 or more	11,678
Percent of total households	40.9	Median (dollars)	222,900
Householder living alone	49,008		
Householder 65 years and over	15,305	CONTRACT RENT	
Persons living in households	415,216	Specified renter-occupied units paying cash rent	91,945
Persons per household	2.61	Less than \$250	4,578
GROUP QUARTERS		\$250 to \$499	31,464
Persons living in group quarters	14,217	\$500 to \$749	38,991
Institutionalized persons	4,026	\$750 to \$999	12,268
Other persons in group quarters	10,191	\$1,000 or more	4,644
		Median (dollars)	551
RACE AND HISPANIC ORIGIN		RACE AND HISPANIC ORIGIN OF HOUSEHOLDER	
White	250,716	Occupied housing units	158,975
Black	58,761	White	110,397
Percent of total population	13.7	Black	20,220
American Indian, Eskimo, or Aleut	2,781	Percent of occupied units	12.7
Percent of total population	0.6	American Indian, Eskimo, or Aleut	992
Asian or Pacific Islander	58,266	Percent of occupied units	0.6
Percent of total population	13.6	Asian or Pacific Islander	13,787
Other race	58,909	Percent of occupied units	8.7
Hispanic origin (of any race)	101,419	Other race	13,579
Percent of total population	23.6	Hispanic origin (of any race)	24,783
		Percent of occupied units	15.6

**Table A-5**  
**LONG BEACH VISITOR MARKET**  
**1991**

<u>Overnight Visitors</u>	<u>Number</u>
Hotel/Motel Guests	744,000
Staying with Friends or Relatives	1,158,000
Campers	<u>13,000</u>
Subtotal	1,915,000
Day Visitors	<u>857,000</u>
Total Visitors	2,772,000

Source: CIC Research, Inc.

**Table A-6**  
**LONG BEACH**  
**VISITOR CHARACTERISTICS<sup>1</sup>**

<b>Average Length of Stay</b>	<b>3.1 nights</b>
1 - 3 Nights	55%
4 - 7 Nights	44
8 - 14 Nights	1
<b>Age Composition</b>	
Under 6 Years	2%
6 - 17	4
18 - 24	1
25 - 34	7
35 - 44	58
45 - 64	25
65+	<u>3</u>
<b>Total</b>	<b>100%</b>
 <b>Median Age — 41</b>	

---

<sup>1</sup>Overnight visitors.

Source: CIC Research, Inc.

**Table A-7**  
**LONG BEACH OVERNIGHT VISITORS**  
**VISITOR ORIGIN**  
**1991**

<u>Region</u>	<u>Percent</u>
Southern California	4%
Northern California	10
Mountain States	12
Other Western	7
East-North Central	17
West North-Central	6
South Atlantic	11
East-South Central	2
West-South Central	7
New England	6
Mid-Atlantic	9
Foreign	<u>9</u>
Total	100%

Source: CIC Research, Inc.

**Table A-8**

**LONG BEACH OVERNIGHT VISITORS  
DAILY EXPENDITURES**

<u>Daily Spending per Group</u>	<u>Overnight (percent)</u>
Less than \$20	4%
\$ 20-\$ 49	7
\$ 50-\$ 99	9
\$100-\$149	34
\$150+	<u>46</u>
Total	100%

Average Group Size            2.1

**Average Daily Expenditure**

Per Group	\$153
Per Person	\$ 88

Source: CIC Research, Inc.



**Table A-9**  
**LONG BEACH OVERNIGHT VISITORS**  
**TRIP PURPOSE**  
**1991**

	<u>Percent</u>
Recreation Oriented	25%
Visiting Friends/Relatives	11
Business	19
Convention	44
Other	<u>1</u>
Total	100%

Source: CIC Research, Inc.

**Table A-10**  
**LOS ANGELES COUNTY VISITOR MARKET**  
**1990**

<u>Overnight Visitors</u>	<u>Number</u>
Hotel/Motel Guests	9,133,000
Staying with Friends or Relatives	<u>16,055,000</u>
Subtotal	25,188,000
Day Visitors	<u>30,132,000</u>
Total Visitors	55,320,000

Source: CIC Research, Inc.

**Table A-11**  
**LONG BEACH HOTEL INVENTORY<sup>1</sup>**

	<u>Number of Rooms</u>
Hyatt Regency	521
Marriott Long Beach Airport	311
Queen Mary	365
Ramada Renaissance	380
Sheraton	460
Viscount	194
Hilton Long Beach	397
Travelodge	200
Golden Sails Hotel	175
Holiday Inn Airport	231
Holiday Inn Downtown	224
Clarion Edgewater	249
Executive House Inn	260
Residence Inn	216
Ramada Inn Long Beach	143
Howard Johnson	134
Breakers	<u>242</u>
Total	4,702

<sup>1</sup>Includes hotel properties with 100+ rooms.

Source: Economics Research Associates.



**Table A-12**  
**AVERAGE DAILY RATE**  
**1982-1991**

<u>Year</u>	<u>Hotel Queen Mary<sup>1</sup></u>	<u>Long Beach Competitive Hotels</u>
1982	\$57	---
1983	62	---
1984	76	---
1985	74	---
1986	75	---
1987	77	\$78
1988	76	82
1989	82	85
1990	86	87
1991	88	86
1992 (year to date)	n.a.	87

n.a. means not available.

<sup>1</sup>1988-1991 Disney fiscal year.

Source: The Walt Disney Company; Port of Long Beach;  
Pannell Kerr Forster, and Economics Research Associates.

Table A-13

**AVERAGE ADMISSION PRICES AND LENGTH OF STAY  
AT SELECTED CALIFORNIA COMMERCIAL  
AND PUBLIC ATTRACTIONS**

<u>Attraction</u>	<u>Adult Admission</u>	<u>Length of Stay</u>	<u>Admission Price/Hour</u>
<b><u>Commercial Attractions—Averages</u></b>			
Theme Park	\$25.00	8.00	\$3.12
Large Water Park	17.00	5.00	3.40
Family Entertainment Center <sup>1</sup>	10.00	2.00	5.00
Movie	7.00	2.00	3.50
Urban Entertainment Center	12.00	3.00	4.00
<b><u>Public Attractions—Averages</u></b>			
Art Museum	\$ 5.00	1.75	\$2.86
Science Museum	5.50	2.00	2.75
Zoo	6.00	3.00	2.00
County Fair <sup>1</sup>	12.00	6.00	2.00
<b><u>Tourist-Oriented Attractions</u></b>			
Movieland Wax Museum	\$12.95	2.00	\$6.50
Ripley's Believe It or Not	6.95	1.00	6.95
Underwater World	10.00	1.25	8.00
Monterey Bay Aquarium	9.75	1.50	6.50
Queen Mary/Spruce Goose	17.95	2.50	7.18

<sup>1</sup> Average attraction expenditures (not including food and beverage expenditures).

Source: Economics Research Associates.

Table A-14

## QUEEN MARY/SPRUCE GOOSE USE SCREENING ANALYSIS

Uses	Location <sup>1</sup>	Physical Compatibility	Demand	Operating Income Potential	City/Port Revenue Potential	Development Cost Modification Requirements	Compliance with Regulatory Guidelines	Consultants Rating	Public Acceptance	Weight A	Total Weight B	Weight C
<b>CONSULTANT RECOMMENDATIONS</b>												
<b>COMMERCIAL RECREATION/RETAIL</b>												
Casino	S	5	4	5	5	4	4	3	4	41	34	27
Card Club	S	4	4	5	5	5	4	3	1	38	31	24
Health Club	S	5	3	3	3	4	5	3	3	37	29	24
Sports Complex	SH											
- Tennis		4	3	2	1	4	5	2	5	33	26	23
- Exhibition		4	2	1	1	4	5	2	5	31	24	21
- Public Aquatics		3	3	1	1	3	5	2	5	30	23	21
Indoor Waterpark	SH	3	3	2	2	3	5	4	5	38	27	24
Family Entertainment Center	B											
- Bowling		2	3	2	2	3	5	1	3	27	21	18
- Ice/Roller Skating		2	3	2	2	3	5	1	3	27	21	18
- Mini-Golf		2	3	3	3	3	5	1	3	29	23	19
- Arcade		5	3	5	3	3	5	1	3	34	28	23
- Other												
Nighttime Entertainment Center	B	3	4	5	4	3	5	5	4	43	33	27
Golf Center/Driving Range	B	2	5	4	3	2	5	1	2	30	24	20
Festival Retail	B	3	3	5	4	3	5	5	4	42	32	26
Dinner Theater (nautical themed Medieval Times)	S	3	3	4	4	3	5	4	5	40	31	26
Environmental Theater	S	4	3	3	2	5	5	3	3	36	28	23
Special Format Theater (IMAX, etc.)	B	3	2	3	2	3	5	4	5	36	27	23
International Outlet Center	SH	3	3	4	3	3	4	3	3	33	26	21
Antique Emporium	S	4	3	4	3	4	4	3	3	35	28	23
Bars of the World	S	4	4	4	4	3	5	3	3	38	30	25
Adult Entertainment Club	S	4	3	3	3	3	4	2	2	30	24	20
<b>PUBLIC/CULTURAL FACILITIES</b>												
Aquarium	B	3	5	1	1	3	5	5	5	38	28	26
Museum (Maritime)	B	5	4	1	1	3	5	5	5	39	29	27
Museum - Children's Technical	S	4	4	1	1	2	5	3	4	32	24	22
Museum - Art	S	4	3	1	1	2	5	2	4	29	22	20
Amphitheater/Concert Venue	B	4	3	3	3	4	5	5	4	41	31	26
Legitimate Theater	S	3	2	2	2	4	5	2	3	30	23	19

Uses	Location <sup>1</sup>	Physical Compatibility	Demand	Operating Income Potential	City/Port Revenue Potential	Development Cost Modification Requirements	Compliance with Regulatory Guidelines	Consultants Rating	Public Acceptance	Weight A	Total Weight B	Weight C
<b>INSTITUTIONAL USES</b>												
Hospital	S	3	3	2	2	2	1	1	3	19	17	14
Church	B	3	3	1	1	5	1	1	2	19	17	14
Library (Maritime)	S	4	2	1	1	4	4	2	4	26	22	19
School/University	S	4	2	1	1	4	1	2	4	22	19	16
Prison	S	4	5	1	1	2	1	1	1	18	16	14
Court House	S	2	2	1	1	3	1	1	2	15	13	11
Mauseleum	S	2	4	3	2	2	1	1	1	18	16	13
Military Training School	S	4	2	1	1	4	3	2	3	25	20	17
Marine Research and Diver Training Center	S	4	1	1	1	4	3	2	3	24	19	16
<b>OFFICE AND COMMERCIAL</b>												
Public Offices	S	3	2	1	1	3	3	1	2	20	16	14
Port Offices	S	4	1	1	1	3	5	2	3	27	20	18
Self-Storage	S	2	3	4	2	3	3	2	2	26	21	17
Warehousing	S	3	3	4	2	4	3	2	2	26	23	18
<b>LODGING/CLUB</b>												
Private Club	S	5	4	4	2	4	1	4	2	31	26	21
Senior Housing	S	4	3	3	3	3	1	1	3	23	21	17
Congregate Care	S	3	3	3	3	2	1	1	3	21	19	15
Timeshare	S	3	5	3	2	4	4	2	4	33	27	23
Club Combination with Undivided Interest	SH	4	4	4	3	3	1	4	3	31	26	21
Homeless Shelter	S	5	5	1	1	5	1	1	2	23	21	18
<b>OPERATING OPTIONS</b>												
Upgraded Hotel	B/S/SH	3	1	2	1	1	5	3	3	27	19	17
Upgraded Conference Center	B	5	4	3	2	4	5	3	3	37	29	25
Stand Alone as is	S	5	2	1	1	1	5	1	1	23	17	16
Keep Hotel Component	S	5	2	1	1	1	5	1	2	24	18	17
Operate Partially	S	5	2	3	3	3	5	4	3	37	28	24
Mothball but keep as Icon	S	5	3	1	4	4	5	4	4	39	30	26
Operate as reduced tour only	S	4	3	3	3	4	5	5	4	41	31	26
Sink - Sub, Scuba Visits	S	5	4	4	3	3	4	4	2	37	29	24
<b>PROGRAMMATIC</b>												
Special Events	B	3	4	3	2	5	5	5	5	42	32	27
Ethnic Festivals	B	4	4	3	2	5	5	5	5	43	33	28



Uses	Location <sup>1</sup>	Physical Compatibility	Demand	Operating Income Potential	City/Port Revenue Potential	Development Cost Modification Requirements	Compliance with Regulatory Guidelines	Consultants Rating	Public Acceptance	Weight A	Total Weight B	Weight C
Submitted Proposals (Unique Options)										0	0	
										0	0	
Casey's Sports Park	SH	4	3	3	3	3	5	3	3	35	27	23
International Themed Attraction	SH	2	2	2	2	1	2	3	3	22	17	15
Permanent World's Fair	SH	2	2	2	2	3	5	2	3	28	21	18
Renovate as Cruise Ship	S	1	3	1	1	1	5	1	3	22	16	15
Renaissance Festival Marketplace	B	4	4	4	4	2	5	5	4	42	32	27
Fantasyworlds Entertainment Complex	SH	1	1	2	2	1	2	1	3	16	13	11
Sports Arena/Stadium	B	4	3	1	1	2	5	3	3	30	22	20
Discovery Theme Park	SH	2	3	3	3	1	2	4	4	28	22	19
Amusement Park	SH	2	3	2	2	1	2	3	4	24	19	17
	Weightings											
	A	1.0	1.0	1.0	1.0	1.0	2.0	2.0	1.0			
	B	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
	C	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0			

<sup>1</sup> B=both ship and shore; S=ship only; SH=shore only

Source: Economics Research Associates

Table A-15

**COMPONENT MIX  
SELECTED ENTERTAINMENT CENTERS**

<u>Entertainment Center/ Location</u>	<u>Food/Restaurant</u>		<u>Entertainment/ Attractions</u>		<u>Retail</u>		<u>Other</u>		<u>Total</u>
	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	<u>Total</u>	<u>Percent</u>	
Church St. Station Orlando, FL	10,000 <sup>1</sup>	8%	40,000	30%	75,000	60%	---	---	125,000
Pleasure Island Orlando, FL	35,000	25	70,000	52	30,000	22	---	---	135,000
Dallas West End Dallas, TX	65,000	40	45,000	28	50,000	31	---	---	160,000
Fishmarket <sup>2</sup> Baltimore, MD	15,000	19	48,000	61	5,000	6	10,000	13%	78,000
City Walk <sup>3</sup> Universal City, CA	60,000	19	50,000	16	100,000	32	100,000 <sup>4</sup>	32	310,000

<sup>1</sup>Food only.<sup>2</sup>Now closed.<sup>3</sup>Under development.<sup>4</sup>Office.

Source: Economics Research Associates.

**Table A-16**  
**CHURCH STREET STATION**  
**CLUB SIZING**

<u>Club</u>	<u>Size (sq.ft.)</u>	<u>Capacity</u>	<u>Theme</u>
Orchid Garden Ballroom and Dessert Cafe	6,000	1,500	Ballroom '30s & '40s Dancing
Rosie O'Grady's	7,500	900	Showboat-Style Saloon— Audience participation
Cheyenne Saloon and Opera House	15,300	1,000+	Country Music
Apple Annie's	7,300	150	Bluegrass
Phineas Phogg's Balloon Works	4,100	410e	Disco/DJ

e = estimate.

Source: Church Street Station and Economics Research Associates.

**Table A-17**  
**COMPONENTS AND SIZING OF**  
**PLEASURE ISLAND**

<u>Components</u>	<u>Approximate Sizing (square feet)</u>
<b><u>Nightclubs (6)</u></b>	<b>70,000</b>
<ul style="list-style-type: none"> <li>• XZFR Rock &amp; Roll Beach Club (live bands/dance club)</li> <li>• Mannequins (high-tech disco)</li> <li>• Cage (high-tech progressive rock—170 video screens)</li> <li>• Adventurer's Club (audio-animatronics and live actors)</li> <li>• Comedy Warehouse (comedy)</li> <li>• Neon Armadillo Saloon (country western/pop)</li> </ul>	
<b><u>Retail and Ground Space</u></b>	<b>30,000</b>
<ul style="list-style-type: none"> <li>• 12 shops</li> </ul>	
<b><u>Restaurants</u></b>	<b>35,000</b>
<ul style="list-style-type: none"> <li>• Portobello Yacht Club (Italian)</li> <li>• Fireworks Factory (barbecue)</li> <li>• Empress Lilly (Riverboat—beef/seafood)</li> <li>• Merry Weather's (food court)</li> </ul>	
<b><u>Cinema Complex</u></b>	<b>47,000</b>
<ul style="list-style-type: none"> <li>• AMC—Ten Plex (2,900 seats)</li> </ul>	
<b>Total</b>	<b>182,000</b>

Source: The Walt Disney Company and Economics Research Associates.

Table A-18

**COMPONENTS AND SIZING OF  
DALLAS WEST-END MARKETPLACE**

<u>Components</u>	<u>Approximate Sizing (square feet)</u>
<b><u>Retail/Fast Food</u></b>	<b>118,000</b>
<ul style="list-style-type: none"> <li>• 3 Levels</li> <li>• 70 Small Specialty Shops</li> <li>• Small Food Court (12 fast food outlets)</li> </ul>	
<b><u>Entertainment</u></b>	<b>21,200<sup>1</sup></b>
<ul style="list-style-type: none"> <li>• Paragon</li> <li>• Froggy Bottoms</li> <li>• Bobbysox</li> <li>• Roadside Saloon</li> </ul>	
<b><u>Other Features</u></b>	<b>17,800</b>
<ul style="list-style-type: none"> <li>• JFK Research Center</li> <li>• Electronic Arcade (Tilt)</li> <li>• Indoor Mini-Golf (36 holes)</li> </ul>	
<b>Total</b>	<b>157,000</b>

<sup>1</sup>Entire Dallas Alley Club Complex is 45,300 square feet (24,000 square feet in adjoining building not part of the marketplace).

Source: Dallas Alley, Dallas Marketplace, and Economics Research Associates.

**Table A-19**  
**DALLAS ALLEY CLUBS**  
**SIZING**

<u>Clubs</u>	<u>Size (sq.ft.)</u>	<u>Capacity</u>	<u>Theme</u>
Paragon	8,500	800	Euro-Tech Contemporary Dance Room
Froggy Bottoms	4,500	275	Rhythm and Blues
Roadside Saloon	4,000	225	Country Music
Bobbysox	4,200	300	'50s, '60s, '70s, DJ
Take 5	4,200	225	Top '40s Dance
Alley Oops	3,800	200	Sports Bar
Alley Cats	3,600	187	Dueling Pianos/Sing-A-Long
Tilt	<u>12,500</u>	1,200	Video Arcade
<b>Total</b>	<b>45,300</b>		

Source: Seville Quarter and Economics Research Associates.

Table A-20

SEVILLE QUARTER  
COMPONENTS AND SIZING

	<u>Size (sq.ft.)</u>	<u>Capacity</u>	<u>Theme</u>
<b><u>Clubs</u></b>			
Rosie O'Grady's	3,700	300	Dixieland & Motown
Lili Marlene's	1,400	110	Blues
Fast Eddie's	1,700	75-100	Billiard Parlor
Phineas Phogg's Balloon Work's	6,500 <sup>1</sup>	600	High Energy Room
Apple Annie's	2,700	250	Live Music—Rock & Roll to Sing-A-Long Country
End of the Alley Bar and Courtyard	6,000	n.a.	Reggae
<b><u>Restaurants</u></b>			
The Palace Oyster Bar	<u>2,300</u>	200	Restaurant
<b>Total</b>	<b>24,300<sup>2</sup></b>		

<sup>1</sup>2 levels.

<sup>2</sup>With courtyards and service areas approximately 30,000 square feet.

Source: Seville Quarter and Economics Research Associates.

Table A-21

**COMPONENTS AND SIZING OF  
THE FISHMARKET<sup>1</sup>**

<u>Components</u>	<u>Approximate Sizing (square feet)</u>
<b><u>Restaurants</u></b>	15,000
<ul style="list-style-type: none"> <li>• Charm City Diner</li> <li>• Fishmarket Grille</li> </ul>	
<b><u>Entertainment</u></b>	48,000
<ul style="list-style-type: none"> <li>• Rooftops (dancing)</li> <li>• Eubie's (live jazz and blues)</li> <li>• Liberty Bell (2,000-seat headliner)</li> <li>• Edgar Allan Pub (street entertainment)</li> <li>• Officer's Club (variety acts)</li> <li>• The Library (relaxing)</li> </ul>	
<b><u>Other Features</u></b>	15,000
<ul style="list-style-type: none"> <li>• Water Street Arcade (retail)</li> <li>• Grand Pavilion (entrance)</li> <li>• Crystal Court</li> <li>• Function Rooms (2)</li> </ul>	
<b>Total</b>	<b>78,000</b>

<sup>1</sup>The Fishmarket closed in July 1989.

Source: The Fishmarket and Economics Research Associates.



**Table A-22**

**ATTENDANCE CHARACTERISTICS OF  
SELECTED ENTERTAINMENT CENTERS**

<b>Name/Location</b>	<b>Pleasure Island Walt Disney World Orlando, FL</b>	<b>Church Street Station Orlando, FL</b>	<b>Dallas Alley Dallas, TX</b>	<b>Seville Quarter Pensacola, FL</b>
<b>Estimated Annual Visitation</b>	2,500,000e	1,500,000	800,000	250,000
<b>Tourist Market Size</b>	15,000,000	15,000,000	3,200,000	3,500,000
<b>Tourist Market Attendance</b>				
<b>Number</b>	2,000,000e	1,125,000	424,000	75,000
<b>Percent</b>	80.0%	75.0%	53.0%	30.0%
<b>Tourist Market Penetration</b>	13.3%	7.5%	13.2%	2.1%
<b>Resident Market Size</b>	1,100,000	1,100,000	2,600,000	349,000
<b>Resident Market Attendance</b>				
<b>Number</b>	500,000e	375,000	376,000	175,000
<b>Percent</b>	20.0%	25.0%	47.0%	70.0%
<b>Resident Market Penetration</b>	45.5%	34.1%	14.5%	50.1%

Source: Individual facilities and Economics Research Associates.

**Table 23**

**ENTERTAINMENT CENTER  
RESIDENT MARKET POPULATION PROFILE  
(0-15 Miles)**

**Population Growth Trends**

1980	2,643,000
1990	2,938,000
1992 (estimated)	2,997,000
1997 (projected)	3,150,000
Average Annual Growth Rate	
1980-1990	1.1%
1990-1997	1.0%

**1990 Population Characteristics**

Percent Male	50.1%
Percent Female	49.9%
Number of Households	976,600
Average Household Size	2.97
Ethnic Composition	
White	57.8%
Black	12.5
American Indian	0.6
Asian/Pacific Islander	12.2
Other	<u>16.9</u>
Total	100.0%
Hispanic Origin	30.3%

Source: Urban Decision Systems and Economics Research Associates.

**Table 24**

**ENTERTAINMENT CENTER  
RESIDENT MARKET AGE DISTRIBUTION  
(0-15 Miles)**

<u>Age Category</u>	<u>Percent</u>
Less than 6 Years	10.1%
6 - 13	11.5
14 - 17	5.4
18 - 24	12.1
25 - 34	19.5
35 - 44	14.6
45 - 64	17.6
65+	<u>9.2</u>
Total	100.0%

**Median Age — 30.4**

**Source: Urban Decisions Systems and Economics Research Associates.**

**Table A-26**  
**COMMERCE CASINO COMPONENTS**  
**AND SIZING**

	<u>Square Feet</u>
<b>Facility Size</b>	<b>130,000 ±</b>
<b>Casino Space (177 tables)</b>	<b>30,000</b>
Poker	116
Asian Games	<u>61</u>
Total	177
<b>Restaurants</b>	
2 - Full Service (China Nine/Players)	
1 - Delicatessen	
1 - Coffee Shop	
<b>Entertainment</b>	
Ball Room (600 capacity)	
Las Vegas-Style Shows	
Tournaments	
Lounge—Live Entertainment	
Gift Shop	
Beauty Shop	

**Source: Economics Research Associates.**

**Table A-25**

**ENTERTAINMENT CENTER  
RESIDENT MARKET INCOME DISTRIBUTION  
(0-15 Miles)**

<b><u>Income Category</u></b>	<b><u>Percent</u></b>
Under \$10,000	13.5%
\$10,000-\$14,999	9.0
\$15,000-\$19,999	8.2
\$20,000-\$24,999	8.1
\$25,000-\$34,999	14.0
\$35,000-\$49,999	17.1
\$50,000+	<u>30.1</u>
Total	100.0%

**Median Household Income — \$33,044**

**Source: Urban Decisions Systems and Economics Research Associates.**

**Table 27**  
**COMMERCE CASINO CARD GAMES**

**Poker Games**

- 7-Card Stud
- Texas Hold'em
- Omaha
- Draw
- Low Ball
- Pan
- Super Pan

**Asian Games**

- Asian Poker
- Paigow
- Asian Stud Poker

**Source: Economics Research Associates.**

**Table A-28**

**ANNUAL GROSS REVENUE  
SELECTED SOUTHERN CALIFORNIA  
CARD CLUBS  
1991**

	<u>Gross Revenue (000)</u>	<u>Number of Tables</u>	<u>Gross Revenue per Table (000)</u>
Commerce Casino/Card Club Commerce, CA	\$76,000	116 <sup>1</sup>	\$652
Bicycle Club Bell Gardens, CA	90,000e	170	529
Normandie Club & Eldorado Club Gardena, CA	36,000e	97	402e

e = estimate.

<sup>1</sup>As of April 1992 have 177 tables..

Source: City of Commerce and Economics Research Associates.





**Table A-29**  
**COMMERCE CASINO**  
**HISTORICAL GROSS REVENUE**

<u>Year</u>	<u>Total Casino Gross Revenue (000)</u>	<u>Number of Tables</u>	<u>Gross Revenue per Table (000)</u>
1984	\$11,631	116	\$100
1985	17,399	116	150
1986	15,335	116	132
1987	27,477	116	237
1988	42,688	116	368
1989	53,056	116	457
1990	65,255	116	562
1991	75,652	116	652

Source: City of Commerce and Economics Research Associates.

**Table A-30**

**CITY OF COMMERCE  
HISTORICAL REVENUES FROM COMMERCE CASINO  
1984-1991<sup>1</sup>**

<u>Year</u>	<u>Number of Tables</u>	<u>Revenues To City (000)</u>	<u>Percent Change</u>
1984	116	\$1,535	---
1985	116	2,297	49.6%
1986	116	2,024	(11.9)
1987	116	3,627	79.2
1988	116	5,635	55.4
1989	116	7,003	24.0
1990	116	8,614	23.0
1991	116	9,730	13.0

---

<sup>1</sup>Fiscal year.

Source: City of Commerce and Economics Research Associates.

**Table A-31**

**CITY OF GARDENA  
HISTORICAL REVENUES FROM CARD CLUBS**

<u>Year<sup>1</sup></u>	<u>Number of Tables</u>	<u>Revenues To City (000)</u>	<u>Percent Change</u>
1982	175	\$3,154	
1983	175	3,040	(3.6%)
1984	160	2,336	(23.2)
1985	120	2,207	(5.5)
1986	120	2,195	(0.5)
1987	120	2,989	36.2
1988	120	3,729	24.8
1989	97	3,942	5.7
1990	97	4,888	24.0
1991	97	4,979	1.9

---

<sup>1</sup>Fiscal year.

Source: City of Gardena and Economics Research Associates.

Table A-32

**CITY OF BELL GARDENS  
HISTORICAL REVENUE FROM BICYCLE CLUB  
1985-1991<sup>1</sup>**

<u>Year</u>	<u>Revenue To City (000)</u>	<u>Percent Change</u>
1985	\$1,440 <sup>2</sup>	--
1986	3,937	173.4%
1987	7,493	90.3
1988	8,699	16.1
1989	9,618	10.1
1990	10,404	8.2
1991	10,565	1.5

---

<sup>1</sup>Fiscal year.

<sup>2</sup>Partial year. Opened in November 1984.

Source: City of Bell Gardens and Economics Research Associates.

Table A-33

**PHYSICAL CHARACTERISTICS  
OF SELECTED SPECIALTY RETAIL CENTERS**

<u>Name/Location/Year Opened</u>	<u>Square Feet</u>	<u>Floors</u>	<u>Use by Floor</u>	<u>Former Use</u>	<u>Theme</u>	<u>Features</u>
The Cannery San Francisco, CA 1967	88,000	3	Mixed use: all levels	Rehabilitated fruit cannery	Small Italian market towns	Outside elevator; courtyard with performance area and food booths
Faneuil Hall Marketplace Boston, MA 1976	219,000 R <u>143,000</u> O 362,000	5, 5 & 2 (3 buildings)	1st & 2nd retail/restaurant; 3rd, 4th & 5th office	Rehabilitated town hall and farmers market	Festival marketplace	Original building facades; pushcarts
Ghirardelli Square San Francisco, CA 1964	145,000 R <u>12,000</u> O 157,000	4 (9 buildings)	Mixed use: all levels except for 3rd floors of office (2 buildings)	Rehabilitated chocolate factory	Turn-of-the-century San Francisco	Extensive use of brick & mahogany; gas lamps
Harborplace Baltimore, MD 1980	135,000	2 buildings	Mixed use: retail/restaurant	New construction	Harbor	Use of glass to provide open water viewing
Harbour Island Tampa, FL 1985	66,000 R	2+ 1 level of parking	Mixed use: including hotel, residential, office market	New construction	Waterfront	View of Tampa from island in the bay
Pier 39 San Francisco, CA 1978	198,000	2	Mixed use: both levels retail/restaurant	Ferry Terminal Market Building	San Francisco waterfront	Located on northernmost point of San Francisco Peninsula; views of marina, bay, and landmarks

**Table A-33  
(Continued)**

<u>Name/Location/Year Opened</u>	<u>Square Feet</u>	<u>Floors</u>	<u>Use by Floor</u>	<u>Former Use</u>	<u>Theme</u>	<u>Features</u>
South Street Seaport New York, NY 1983	233,000 R <u>60,000 O</u> 293,000	3-5	Fulton Market: all food; Schermmerhorn Row: 1st & 2nd retail, 3rd office; Museum Block: 1st & 2nd retail, 3rd, 4th & 5th office; Pier 17: retail & restaurant—3 levels	Renovated waterfront district; original buildings served as counting houses	Historic waterfront	Cobblestone pedestrian streets
Waterside Norfolk, VA 1983	110,000	2	Mixed use: retail/restaurant	Ferry terminal market building	Historic waterfront	Airy steel and glass structure with Victorian detailing
Bayside/Miami, FL/1987		2 in each building	North Pavilion predom- inantly retail; South Pavilion predominantly food	New construction	Waterfront festival marketplace	Located on Biscayne Bay; open-air pavilions; surrounds a 208-slip marina
Restaurant	110,000					
Retail	90,000					
Fast food	25,000					
Flowers/produce	6,500					
Market food	<u>3,500</u>					
	235,000					
Shoreline Village Long Beach, CA 1983	70,000	1	Retail shops	New construction	Maritime	1906 Carousel
Seaport Village San Diego, CA 1980	94,000	1	Retail specialty shops, fast food, restaurants	New construction	Historic Seaport Village	Waterfront Boardwalk, 100-year old Carousel, ponds, waterfall

Note: R means retail/restaurant, O means office.

Source: Individual centers and Economics Research Associates.

**Table A-34**

**ESTIMATED ANNUAL VISITATION  
OF SELECTED SPECIALTY RETAIL CENTERS  
1991  
(Thousands)**

<u>Name/Location</u>	<u>Total<sup>1</sup> Visitation (thousands)</u>	<u>Tourists (percent)</u>	<u>Residents<sup>2</sup> (percent)</u>
The Cannery San Francisco, CA	3,100	60%	40%
Faneuil Hall Marketplace Boston, MA	14,000	55	45
Ghirardelli Square San Francisco, CA	4,000	75	25
Harborplace Baltimore, MD	16,000	55	45
The Shops on Harbour Island Tampa, FL	1,000	n.a.	n.a.
Pier 39 San Francisco, CA	10,500	60	40
South Street Seaport New York, NY	13,000	50	50
Bayside Miami, FL	10,000	65	35
Shoreline Village Long Beach, CA	3,500	50* 15-30**	50* 70-85**
Seaport Village San Diego, CA	4,000	70* 50**	30* 50**

\*Summer \*\*Winter n.a. means not available

<sup>1</sup>Many centers do not make estimates or conduct patron surveys to determine visitation.

<sup>2</sup>Includes employee/office worker market segment.





**Table A-35**

**GROSS SALES PER NET SQUARE FOOT OF SELECTED  
SPECIALTY RETAIL CENTERS  
1991**

<u>Name/Location</u>	<u>Restaurant</u>	<u>Fast Food</u>	<u>Retail</u>	<u>Average</u>
The Cannery San Francisco, CA	\$185		\$255	\$205
Faneuil Hall Marketplace Boston, MA	550e	\$950e	650e	600e
Ghirardelli Square San Francisco, CA	540	---	300	410
Pier 39 San Francisco, CA	400	650	600	600
South Street Seaport New York, NY	425	800	660	525
Bayside Miami, FL	350e	650e	450e	400e
Shoreline Village Long Beach, CA		445	235	365e
Seaport Village San Diego, CA	376	461	430	415e

n.a. means not available.

e means estimated.

Source: Individual centers and Economics Research Associates.

**Table A-36**

**RESTAURANT PERFORMANCE  
AT SELECTED ROUSE CENTERS**

	<u>Annual Sales</u> <u>(thousands)</u>	<u>Area</u> <u>(sq.ft.)</u>	<u>Sales per</u> <u>Square Foot</u>
<b><u>Bayside</u></b>			
Jardin Brazilien	\$2,400	3,247	\$742
Las Tapas	3,200	7,522	427
Peacock Cafe	1,300	4,194	313
Sharkey's	1,100	5,866	187
<b><u>South Street Seaport</u></b>			
Roebling's	\$3,600	6,829	\$527
Gianni's	4,400	7,943	554
Sloppy Louie's	1,500	3,473	432
<b><u>Harborplace</u></b>			
Phillip's	\$8,500	11,896	\$715
City Limits	1,700	5,207	326
Bamboo House	1,200	2,995	401
<b><u>Faneuil Hall</u></b>			
City Side	\$2,800	4,870	\$575
Landmark Inn	3,800	12,644	301
Lily & Lily's	3,800	6,938	548
Seaside	3,500	8,614	406
<b>Average</b>	<b>\$3,100</b>	<b>6,600</b>	<b>\$460</b>

Source: The Rouse Company and Economics Research Associates.

Table A-37

## OPERATING CHARACTERISTICS OF DINNER THEATERS

<u>Name/Location</u>	<u>Year Opened</u>	<u>Seats</u>	<u>Ticket Prices<sup>1</sup></u>	<u>Performance/ Week</u>	<u>Shows per Year</u>	<u>Average Run (run/ weeks)</u>
Griswold's Candlelight Pavilion Claremont, CA	1985	299	\$28.00-\$50.00	7	5	11-13
Elizabeth Howard's Curtain Call Theatre, Tustin, CA	1980	300	\$19.95-\$30.95	7	Varies	12-16
Medieval Times Buena Park, CA	1986	1,130	\$28.95-\$32.95	N.A.	N.A.	N.A.
Lawrence Welk Resort Theatre Escondido, CA	1982	330	\$26.00-\$36.00	8		10-11
Carousel Akron, OH	1973	1,130	\$27.50-\$30.50	8	4 to 5	8-10
Marriott's Lincolnshire Lincolnshire, IL	1978	862	\$30-theater only Dinner in hotel restaurant \$16-\$23	8	5	10-12
Candlelight Dinner Playhouse Chicago, IL	1959	572	\$42.95-\$45.95	8	3 to 4	12-16

N.A. means Not Applicable.

<sup>1</sup>Range indicates weekday/weekend.

Source: Individual surveyed dinner theaters and Economics Research Associates.

Table A-38

## ATTENDANCE CHARACTERISTICS OF DINNER THEATERS

Name/Location	Griswold's Candlelight Pavilion/ Claremont, CA	Elizabeth Howard's Curtain Call/ Tustin, CA	Medieval Times/ Buena Park, CA	Lawrence Welk Resort Theatre/ Escondido, CA	Carousel/ Akron, OH	Marriott's Lincolnshire/ Lincolnshire, IL
Annual Capacity	109,000	109,000	---	137,000	470,000	358,000
Annual Attendance	75,000e	93,000	500,000	105,000	180,000	320,000
Mix						
Individual	60.0%	n.a.	70.0%	n.a.	50.0%	78.0%
Group	40.0%	n.a.	30.0%	n.a.	50.0%	22.0%
Resident Market Size	2,700,000	3,300,000	2,500,000	660,000	3,800,000	4,700,000
Percent of Attendance from Resident Market (estimate)	70.0%	70.0%	75.0%	50.0%	50.0%	85.0%
Market Penetration	1.9%	2.0%	15.0%	8.0%	2.4%	5.8%

n.a. means not available.

Source: Individual dinner theaters and Economics Research Associates.

Table A-39

## GENERAL CHARACTERISTICS OF SELECTED MARITIME MUSEUMS

Name/Location	Los Angeles Maritime Museum Los Angeles, CA	San Diego Maritime Museum San Diego, CA	San Francisco Maritime National Historical Park San Francisco, CA	Mystic Seaport Museum Mystic, CT	USS Alabama Battleship Memorial Park Mobile, AL
Exhibit Area (sq.ft.)	25,000 (2 floors)	n.a.	3,000	n.a. Main Building (2 floors) 17 Acres	n.a.
Facilities	Converted Ferry Boat Terminal, Amateur Radio Station, Library	3 Historic Vessels	Maritime Museum, Library, Historic Vessels, Bookstore/Gift Shop at Hyde Street Pier	Museum, Bookstore, Restaurant, Shops, 3 Tall Ships Small Planetarium	Battleship and Submarine
Year Museum Established	1980	1951	1948		
Hours of Operation	Tuesday-Sunday 10am-5pm	Daily 9am-8pm	Daily 10am-5pm	May-October Daily 9am-5pm November-April Daily 9am-4pm	Daily 8am-Sunset
Admission Prices					
Adult	Donation of \$1.00	\$5.00	Museum free,	\$14.00	\$5.00
Child	suggested	\$1.25	Hyde Street Pier Vessels Adult: \$3.00 Child (12-17): \$1.00	\$ 8.75	\$2.50

**Table A-39  
(Continued)**

<b>Name/Location</b>	<b>South Street Seaport Museum New York, NY</b>	<b>Philadelphia Maritime Museum Philadelphia, PA</b>	<b>Vancouver Maritime Museum Vancouver, BC</b>	<b>Patriots Point Naval and Maritime Museum Mt. Pleasant, SC</b>
<b>Exhibit Area (sq.ft.)</b>	15,000 (3 floors)	10,000 2,000/Library	4,000 2,000/Library	n.a.
<b>Facilities</b>	3 Galleries, Children's Center, 5 Ships	4 Galleries, 120-seat Auditorium; Wooden Boat Exhibit & Workshop	Harbor, Museum, Gallery, St. Rock Tour Boat	5 Ships: Aircraft Carrier, Destroyer, Coast Guard Cutter, Nuclear-powered Cargo Ship; Gift Shop
<b>Year Museum Established</b>	1967	1961	1958	
<b>Hours of Operation</b>	Daily 10am-5pm	Monday-Saturday 10am-5pm Sunday 1pm-5pm	Daily 10am-5pm	March-September Daily 9am-6pm January-March/ October-December Daily 9am-5pm
<b>Admission Price</b>				
Adult	\$6.00 <sup>1</sup>	\$2.50	\$5.00	\$8.00
Child	\$3.00	\$1.00	\$2.50	\$4.00

<sup>1</sup>Boat Tour: Adult \$12; Child \$7.

Source: Economics Research Associates.

Table A-40

## ATTENDANCE CHARACTERISTICS OF SELECTED MARITIME MUSEUMS

Name/Location	Los Angeles Maritime Museum Los Angeles, CA	San Diego Maritime Museum San Diego, CA	San Francisco Maritime National Historical Park San Francisco, CA	Mystic Seaport Museum Mystic, CT	USS Alabama Battleship Memorial Park Mobile, AL
Total Attendance	200,000	175,000	485,000 <sup>a</sup>	432,000 <sup>e</sup>	321,000
Percent Adults	60%	n.a.	60%	84%	90%
Percent Children	40%	n.a.	40%	16%	10%
Percent Residents	20%	35	30%	15%	15%
Percent Tourists	80%	65	70%	85%	85%
Number of Members	1,000	1,600	500	17,000	n.a.
Average Length of Stay (hours)	.75-2	n.a.	1	3.5.	n.a.

**Table A-40  
(Continued)**

<b>Name/Location</b>	<b>South Street Seaport New York, NY</b>	<b>Philadelphia Maritime Museum Philadelphia, PA</b>	<b>Vancouver Maritime Museum Vancouver, BC</b>	<b>Patriots Point Naval and Maritime Museum Mt. Pleasant, SC</b>
<b>Total Attendance</b>	100,000* 450,000**	90,000	100,000	290,000
<b>Percent Adults</b>	65%	56%	40%	90%
<b>Percent Children</b>	35%	44%	60%	10%
<b>Percent Residents</b>	n.a.	n.a.	40%	10%
<b>Percent Tourists</b>	n.a.	n.a.	60%	90%
<b>Number of Members</b>	5,000	850	600	n.a.
<b>Average Length of Stay (hours)</b>	1.5-3	.50-1	n.a.	3.5

\*Museum only.    \*\*Including excursionary boat tours.

e means estimate.    n.a. means not available.

'Reflects free admission.

Source: Economics Research Associates.



Table A-41

**MARITIME MUSEUMS  
TOURIST MARKET ATTENDANCE ANALYSES**

<b>Name/Location</b>	<b>Los Angeles Maritime Museum Los Angeles, CA</b>	<b>San Diego Maritime Museum San Diego, CA</b>	<b>San Francisco Maritime National Historical Park San Francisco, CA</b>	<b>USS Alabama Battleship Memorial Park Mobile, AL</b>	<b>Mystic Seaport Museum Mystic, CT</b>
<b>Annual Visitation</b>	200,000	175,000	485,000	321,000	432,000
<b>Tourist Market Attendance</b>					
<b>Number</b>	160,000	114,000	340,000	273,000	367,000
<b>Percent</b>	80%	65%	70%	85%	85%
<b>Tourist Market Size<sup>1</sup></b>	14,000,000	7,300,000	5,250,000	750,000	1,250,000 <sup>e</sup>
<b>Tourist Market Penetration</b>	1.1%	1.6%	6.5%	36.4%	29.4%

<sup>e</sup> = estimate.

<sup>1</sup>Recreation-oriented overnight visitors.

Source: Individual museums and Economics Research Associates.

**Table A-43**

**MARITIME MUSEUM  
RESIDENT MARKET AGE DISTRIBUTION  
(0-20 Miles)**

<u>Age Category</u>	<u>Percent</u>
Less than 6 Years	10.4%
6 - 13	11.7
14 - 17	5.6
18 - 24	12.9
25 - 34	19.8
35 - 44	14.1
45 - 64	16.5
65+	<u>9.0</u>
Total	100.0%

**Median Age — 29.5**

**Source: Urban Decisions Systems and Economics Research Associates.**

**Table A-44**

**MARITIME MUSEUM  
RESIDENT MARKET INCOME DISTRIBUTION  
(0-20 Miles)**

<u>Income Category</u>	<u>Percent</u>
Under \$10,000	14.6%
\$10,000-\$14,999	9.4
\$15,000-\$19,999	8.6
\$20,000-\$24,999	8.4
\$25,000-\$34,999	14.2
\$35,000-\$49,999	16.7
\$50,000+	<u>28.1</u>
Total	100.0%

**Median Household Income — \$31,218**

**Source: Urban Decisions Systems and Economics Research Associates.**

Table A-45

**BREAKDOWN OF ATTENDANCE AT SELECTED AQUARIUMS  
1991**

	<u>Monterey Bay Aquarium</u>	<u>National<sup>b</sup> Aquarium in Baltimore</u>	<u>New England Aquarium</u>	<u>Seattle Aquarium</u>	<u>Shedd Aquarium</u>	<u>Vancouver Aquarium</u>
Total Admission	1,781,000	1,524,000	1,263,000	630,000	2,100,000	810,000
Total Paid Admission	1,508,000 <sup>d</sup>	1,338,000	958,000	503,000 <sup>d</sup>	1,365,000 <sup>e</sup>	618,000
Total General Admission	1,407,000	1,192,000	854,000	464,000	n.a.	545,000
Total Members	158,000	57,000	75,000	18,000	n.a.	94,000
Total Group	67,000 <sup>c</sup>	243,000	104,000 <sup>c</sup>	39,000	430,000 <sup>e</sup>	73,000
Paid Admission as % of Total	85%	88%	76%	80%	65%	76%

Note: Except where otherwise noted, total paid attendance is equal to the sum of total paid general admission and total paid group admission.  
n.a. means not available.

<sup>d</sup>Also includes special events for which admission is charged.

<sup>c</sup>Paid group attendance only.

<sup>b</sup>1990 data.

<sup>e</sup>Excluding group attendance.

Source: Individual Aquariums and Economics Research Associates.

Table A-46

**GENERAL ADMISSION PRICES  
AT SELECTED MAJOR AQUARIUMS  
1992**

<u>Facility</u>	<u>Admission Price</u>
<b>Monterey Bay Aquarium</b>	
Adult	\$ 9.75
Senior (over 56 years)	7.25
Active Military	7.25
Students	7.25
Child (3-12 years)	4.50
<b>National Aquarium in Baltimore</b>	
Adult	\$11.50
Senior (over 60 years)	9.50
Active Military	8.75
Student (12-18 years)	8.75
Child (3-11 years)	7.50
<b>New England Aquarium</b>	
Adult	\$ 7.50
Senior	6.50
Child (3-11 years)	3.50
<b>Seattle<sup>1</sup></b>	
Adult	\$ 6.00
Youth (6-18 years)	3.50
Senior	3.50
Child (3-5 years)	1.00
<b>Shedd Aquarium</b>	
Aquarium & Oceanarium	
Adult	\$ 7.00
Senior	5.00
Child	5.00
Aquarium Only	
Adult	5.00
Senior	2.75
Child	0.50

**Table A-46  
(Continued)**

<u>Facility</u>	<u>Admission Price</u>
<b>Vancouver Aquarium (US\$)</b>	
Adult	\$ 7.10
Senior (over 65 years)	6.05
Youth (13-18 years)	6.05
Child (5-12 years)	4.38
<b>Mystic Marinelife Aquarium</b>	
Adult	\$ 8.50
Senior	7.50
Child (5-12 years)	5.00

**Note:** With the exception of Monterey Bay, all of the aquariums listed above have marine mammal demonstrations as part of their attraction content.

**\*King County residents:** Adult \$5.00/Youth \$2.75/Children \$0.50

**Source:** Individual Aquariums and Economics Research Associates.

**Table A-47**

**CHARACTERISTICS OF U.S. TIMESHARE RESORTS**

Timeshare Resort	1,200
Timeshare Units	60,380
Average Units per Resort	50
Unit Mix	
Singles	18%
1 Bedrooms	33
2 Bedrooms	43
3+ Bedrooms	<u>6</u>
Total	100%

Source: Worldwide Resort Timesharing Industry, 1990.

**Table A-48**

**AVERAGE WEEKLY PRICES OF  
TIMESHARE INTERVALS**

<u>Year</u>	<u>Weekly Price</u>	<u>Annual Increase</u>
1980	\$3,935	---
1981	4,755	20.8%
1982	5,337	12.2
1983	6,009	12.6
1984	6,750	12.3
1985	n.a.	n.a.
1986	6,750	0.0
1987	7,496	11.0
1988	7,000	(6.6)
1989	8,515	21.6
1990	8,750	2.8

**Source: Economics Research Associates.**



**Table A-49**

**DEMOGRAPHIC PROFILE OF  
U.S. TIMESHARE OWNERS**

<b>Annual Household Income</b>	
Less than \$20,000	2.8%
\$20,000-\$29,999	10.7
\$30,000-\$39,999	17.6
\$40,000-\$49,999	19.4
\$50,000-\$99,999	42.3
\$100,000+	<u>7.1</u>
<b>Total</b>	<b>100.0%</b>
 <b>Median Household Income</b>	
	<b>\$49,700</b>
 <b>Age of Head of Household</b>	
Under 35 Years	15.0%
35-44 Years	27.0
45-54 Years	24.2
55+ Years	<u>33.8</u>
<b>Total</b>	<b>100.0%</b>
 <b>Median Age</b>	
	<b>47</b>
<b>Percent Married</b>	<b>86.4%</b>
<b>Percent with No Children at Home</b>	<b>63.2%</b>

**Source: Fractional Interest Purchasers: Who They Are, Why They Buy.**

**Table A-50**  
**BUYER MOTIVATIONS**  
**(U.S.)**

Exchange Opportunity	81.2%
Save Money on Future Vacation Costs	59.2
Liked Resort/Amenities and/or Unit	57.6
Certainty of Quality Accommodations	31.9
Investment or Resale Potential	27.0
Opportunity to Own at Affordable Price	21.0

Source: Worldwide Resort Timesharing Industry, 1990.

**Table A-51**

**CHARACTERISTICS OF SELECTED TIMESHARE RESORTS**

<b>Name</b>	<b>Number of Units</b>	<b>Unit Type</b>	<b>Unit Size (sq.ft.)</b>	<b>Amenities</b>
<b>Vistana Resort Lake Buena Vista, Florida</b>	740	2-bedroom condos (12- & 18-unit bldgs, 3 stories)	1,100 (new units) 1,280	Series of interlocking lakes, recreation center in each phase. Pools, Whirlpools, children's playground, units have view of lakes.
<b>Marriott's Sabal Palms Orlando, Florida</b>	80	2-bedroom	1,250	1 pool, 3 spas, recreation center. Full use of amenities of World Center resort. These include championship golf course, tennis, pro shops, 10 restaurants, health club.
<b>Marriott's Royal Palms Orlando, Florida</b>	123	2-bedroom	1,250	Pool, 2 Whirlpool spas, 2 tennis courts, exercise room, jogging trail, sauna. Full use of amenities at World Center resort.
<b>Charter Club of Marco Beach Marco Island, Florida</b>	82	2-bedroom condos	n.a.	All units face golf course, tennis courts, putting green, pool, Whirlpool spa, fitness facility.
<b>The Ridge Stateline, Tahoe</b>	204	2-bedroom condos (5 bldgs/8-11 stories)	—	45,000 sq.ft. clubhouse with restaurant/lounge, deli, concierge, retail shops, exercise room, racquetball, tennis, 2 pools, 5 saunas, 10 spas on property; private gondola to ski area.
<b>Tamarack Beach Resort Carlsbad, California</b>	54	1- & 2-bedroom condos	n.a.	Hot tubs, restaurant, gym, beach across street.

**Table A-51  
(Continued)**

Name	Number of Units	Unit Type	Unit Size (sq.ft.)	Amenities
Shell Winner Circle's Carlsbad Inn Carlsbad, California	133	1- & 2-bedroom condos (2 bldgs, 3 stories)	---	Across from beach. Beach cabana, pool, 3 Whirlpool spas, Jacuzzi, gym, 2 restaurants, 67-room hotel.
Lawrence Welk Resort Villas Escondido, California	286	2-bedroom (most in 8-plexes)	1,386	2 golf courses, dinner theater and restaurant, 140-room hotel, 3 recreation centers with pools, Jacuzzis.
The Whaler Kaanapali, Maui	43	Studio, 1- & 2-bedroom condos	1,118 (1 bd) 1,925 (2 bd)	Beach, tennis, pool, sauna, adjacent golf.
Makai Club Cottages/Makai Club Princeville, Kauai	18 cottages 40 condos	2-bedroom cottages 1-bedroom condos	1,800 750	Princeville golf course frontage. Pool, tennis.
Pahio at Ka'Eo Kai Princeville, Kauai	84	2-bedroom	2,100	Jacuzzi in units. Pools, tennis. Ocean and mountain views.
Port de Plaisance St. Maartens, Netherlands Antilles	88 (280 planned)	Studio, 1-, 2- and 3-bedroom condos	---	Casino (open in February), marina, pools, health and tennis spa.
Four Seasons Fairways The Algarve, Portugal	130	2- & 3-bedroom apartments	---	About 50% of units have golf course frontage. All have terraces/patio with indoor pools. Large clubhouse.
Quinta do Lago The Algarve, Portugal	---	1-, 2- & 3-bedroom apartments	---	Clubhouse with dining room and bar, health club and tennis courts.
XIV Resort Project Toba, Japan	414	---	---	Pools, health club, tennis complex, boating on bay.

Source: Economics Research Associates.

Table A-52

## CHARACTERISTICS OF TIMESHARE RESORT PROJECTS

Name/Location	Type of Interval	Start of Sales	Number of Intervals		Pricing	Annual Maintenance Fee
			Offered	Sold		
Vistana Resort Lake Buena Vista, Florida	1 week Fixed or floating	1980	39,700	37,000	\$11,000 (average)	\$325
Marriott's Sabal Palms Orlando, Florida	1 week Floating	1986	4,080	4,080	\$11,800 (nonprime) \$14,800 (prime season)	\$315
Marriott's Royal Palms Orlando, Florida	1 week Floating	1988	6,273	6,273	\$11,800 (nonprime) \$14,800 (prime season)	\$315
Charter Club of Marco Beach Marco Island, Florida	1 week Fixed	1982	4,080	2,530	\$7,900 (nonprime) \$17,500 (prime season) \$12,000 (average)	\$390
The Ridge Stateline, Nevada	1 week Floating	1982	10,400	10,400	\$15,500 (low season) \$17,950 (high season)	n.a.
Tamarack Beach Resort Carlsbad, California	1 week Floating	1985	2,754	2,500+	\$14,990-\$17,990 (1 bd) \$17,990-\$21,990 (2 bd)	
Shell Winner Circle's Carlsbad Inn Carlsbad, California	1 week Fixed	1986	6,783	6,500e	\$ 8,900-\$16,900 \$12,000-\$13,000 (average)	\$251/\$295

**Table A-52  
(Continued)**

Name/Location	Type of Interval	Start of Sales	Number of Intervals		Pricing	Annual Maintenance Fee
			Offered	Sold		
Lawrence Welk Resort Villas Escondido, California	1 weeks Fixed	Late 1984	14,856	14,856	\$15,900	\$328
The Whaler Kaanapali, Maui	2 weeks Fixed	1975	2,193	2,193	\$31,002-\$45,000 (2 weeks)	\$800
Makai Club Cottages/Makai Club Princeville, Kauai	1 week Floating	1986	2,958	2,200	\$18,900/cottages \$13,500/condos	\$563 \$388
Pahio at Ka'Eo Kai Princeville, Kauai	1 week Fixed	1984	4,284	3,200	\$16,000-21,000	\$350
Port de Plaisance St. Maartens, Netherlands Antilles	1 week Fixed or floating	12/1990	4,400	n.a.	Low/High Season \$ 9,900/15,895 (studio) \$15,070/21,945 (1 bd) \$23,100/37,015 (2 bd)	n.a.
Four Seasons Fairways The Algarve, Portugal	1 week or 6- to 8-week package	1990e			\$13,500-24,000+	
Quinta do Lago Timeshares The Algarve, Portugal		1986e			\$13,200-35,000/high \$ 8,000-24,000/low	

n.a. means not available.

Source: Economics Research Associates.

**Table A-53**

**ESTIMATED LABOR REQUIREMENTS AND COSTS  
SPRUCE GOOSE**

<u>Position</u>	<u>Number</u>	<u>Total Compensation Amount</u>
General Manager	1	\$ 60,000
<b><u>Marketing</u></b>		
Director	1	45,000
Group Sales Manager	1	35,000
Advertising and Promoters Manager	1	35,000
<b><u>Finance/Accountant</u></b>		
Director	1	45,000
Bookkeeping	2	60,000
<b><u>Operations</u></b>		
Engineer	1	35,000
Attraction Attendance	3.0	
Retail sales and Clerks		
Food Service	10	131,000 <sup>1</sup>
Custodial	2	<u>30,000</u>
Subtotal Labor		<b>\$462,000</b>
Benefits (at 30%)		<u>139,000</u>
Total Labor		<b>\$615,000</b>

<sup>1</sup>\$5.00 per hour x 8 hours/day x 365 days/year.

Source: Economics Research Associates.

Assumptions-Option 1, Entertainment Center

**DATA INPUT**

Year 1 = 1

**ATTENDANCE (000)**

o First year 750  
o Sixth year 860  
o Eleventh year 900

**OPERATING RATIOS**

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Total Operating Expenses (as a % of Gross Rev's)	80%	79%	78%	78%	78%	78%	78%	78%	78%	78%
Individual Operating Exp. (% of Total Op. Exp.)										
o Wages, Salaries	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%
o Advertising	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
o Maintenance	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%
o Op. supplies	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
o Utilities	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
o Contract Entertain.	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
o G & A	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
C.G.S. (% of line rev's)										
o Food	33%									
o Merchandise	45%									
o Alcohol	22%									
LAND LEASE FEE (% gross):	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



**PER CAPITA EXPENDITURES**

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Admissions	\$11.65	\$12.12	\$12.60	\$13.10	\$13.63	\$14.17	\$14.74	\$15.33	\$15.94	\$16.58
Food and Beverage	\$10.00	\$10.40	\$10.82	\$11.25	\$11.70	\$12.17	\$12.65	\$13.16	\$13.69	\$14.23
Merchandise	\$4.00	\$4.16	\$4.33	\$4.50	\$4.68	\$4.87	\$5.06	\$5.26	\$5.47	\$5.69
Dinner Theater	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total	\$25.65	\$26.68	\$27.74	\$28.85	\$30.01	\$31.21	\$32.46	\$33.75	\$35.10	\$36.51

**ATTENDANCE (000)**

Ent. Center	750	770	790	810	830	860	870	880	890	900
Museum & Tour										



# Assumptions Options 2, Entertainment Center/Card Club

## DATA INPUT

Year 1 = 1

## ATTENDANCE (000)

o First year 750  
o Sixth year 860  
o Eleventh year 900

## OPERATING RATIOS

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Total Operating Expenses (as a % of Gross Rev's)	80%	79%	78%	78%	78%	78%	78%	78%	78%	78%
Individual Operating Exp. (% of Total Op. Exp.)										
o Wages, Salaries	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%	46.00%
o Advertising	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
o Maintenance	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%	22.00%
o Op. supplies	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
o Utilities	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
o Contract Entertain.	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
o G & A	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
C.G.S. (% of line rev's)										
o Food	33%									
o Merchandise	45%									
o Alcohol	22%									

CAPITAL GAINS TAX RATE:	20%										
INFLATION RATE:	4.00%										
Inflation Index	1.00	1.04	1.08	1.12	1.17	1.22	1.27	1.32	1.37	1.42	1.48
CAPITALIZATION RATE:	18.00%										
DEVELOPMENT COSTS:											
o Land (000)	\$2,500										
o Construction (000)	\$25,000										
Total (000)	\$27,500										
o Debt	60%										
o Equity	40%										
LOAN INTEREST RATE:	13.00%										
LOAN TERM (YEARS):	20										
DEPRECIATION PER. (YEARS):	15										
REINVESTMENT (% GROSS):	1.50%										
LOAN AMORTIZATION	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
Interest	\$2,134	\$2,109	\$2,079	\$2,046	\$2,009	\$1,968	\$1,917	\$1,861	\$1,798	\$1,728	\$1,644
Principal	\$188	\$211	\$240	\$273	\$311	\$354	\$403	\$459	\$522	\$594	\$676
PER CAPITA EXPENDITURES	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
Admissions	\$10.48	\$10.80	\$11.34	\$11.79	\$12.26	\$12.75	\$13.26	\$13.79	\$14.34	\$14.92	\$15.51
Food and Beverage	\$9.70	\$10.09	\$10.49	\$10.91	\$11.35	\$11.80	\$12.27	\$12.76	\$13.26	\$13.81	\$14.36
Merchandise	\$3.80	\$3.95	\$4.11	\$4.27	\$4.45	\$4.62	\$4.81	\$5.00	\$5.20	\$5.41	\$5.62
Dinner Theater	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total	\$23.98	\$24.94	\$25.94	\$26.97	\$28.05	\$29.18	\$30.34	\$31.56	\$32.82	\$34.13	\$35.50
ATTENDANCE											
Ent. Center Att	750	770	790	810	830	860	870	880	890	900	900
Card Club Rev./Table	300	325	350	375	400	400	450	450	450	450	450

### ASSUMPTIONS - OPTION 3, AS IS

<u>1. Attendance</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Annual Attendance	800,000	776,000	752,720	737,666	730,289	722,986	715,756	708,599	701,513	694,498
% Change		-3.00%	-3.00%	-2.00%	-1.00%	-1.00%	-1.00%	-1.00%	-1.00%	-1.00%
<u>2. Revenues</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
a. Hotel										
- Occupancy	50%	55%	60%	65%	65%	65%	65%	65%	65%	65%
- Roomnights	66,185	72,804	79,422	86,041	86,041	86,041	86,041	86,041	86,041	86,041
- Avg. Room Rate	\$82	\$82	\$84	\$85	\$87	\$90	\$92	\$95	\$98	\$101
- Room Revenue	\$5,427,170	\$5,969,887	\$6,642,856	\$7,340,356	\$7,487,163	\$7,711,778	\$7,943,131	\$8,181,425	\$8,426,868	\$8,679,674
					Other					
b. Other	Hotel	Food	Merchandise	Attraction	(avg 89-91)	Total				
- Per Capita (1991)	NA	\$19.92	\$4.27	\$13.04	\$4.65	NA				
- Inflation	3.00%	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30	1.34
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
- Per Capita Projections										
Admissions	\$13.04	\$13.04	\$13.04	\$13.43	\$13.83	\$14.25	\$14.68	\$15.12	\$15.57	\$16.04
Food	\$20.52	\$21.13	\$21.77	\$22.42	\$23.09	\$23.79	\$24.50	\$25.23	\$25.99	\$26.77
Merchandise	\$4.40	\$4.53	\$4.67	\$4.81	\$4.95	\$5.10	\$5.25	\$5.41	\$5.57	\$5.74
Other	\$4.79	\$4.93	\$5.08	\$5.23	\$5.39	\$5.55	\$5.72	\$5.89	\$6.07	\$6.25

Other expenditures decline by \$0.70 to account for decrease in parking revenues. Assumes reduction in parking fee by \$2.50 x 85% auto arrivals/3 persons per auto = \$0.70 per capita. Non-admissions per capitas inflated to 1992 dollars. Other expenditures represent 89-91 average inflated.

- Year 1 per capitas	NA	\$20.52	\$4.40	\$7.82	\$4.09	NA
- Other Revenues	\$5,427,170	\$16,414,080	\$3,518,480	\$6,259,200	\$3,271,600	\$34,890,530

### 3. Direct Operating Expenses

Assumes 1/3 hotel labor expenses variable, based on changing occupancies. Adjusted for inflation.

Assumes non-labor expense 1/2 variable, based on changing occupancies. Adjusted for inflation.

### 3. Direct Operating Expenses (Continued)

b. Cost of Goods Sold - Assumes attraction industry standards for food and beverage and merchandise adjusted to reflect Disney historical figures.

	Percent
Food	30.00%
Merchandise	50.00%
Other	25.00%

c. Other Expenses - Assumes 1/2 all expenses variable. Based on change in gross revenues. Plus inflation.

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Other Exp. Adj.	-5.00%	3.26%	3.44%	4.26%	3.99%	4.08%	4.08%	4.08%	4.08%	4.08%
Other Non-Labor Adj.	-5.00%									

### d. Total Direct Expenses

Labor Expense	\$10,578,320	\$10,981,846	\$11,411,640	\$11,930,086	\$12,383,189	\$12,862,621	\$13,360,913	\$13,878,832	\$14,417,167	\$14,976,696
Non-Labor Expense	\$9,199,510	\$9,590,519	\$10,005,222	\$10,496,222	\$10,891,192	\$11,308,725	\$11,742,550	\$12,193,325	\$12,661,727	\$13,148,425

### 4. Indirect Operating Expenses

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
a. Undistr. Exp.										
G & A	\$1,468	\$1,512	\$1,557	\$1,604	\$1,652	\$1,702	\$1,753	\$1,805	\$1,859	\$1,915
Repairs & Mnt.	\$8,000	\$8,240	\$8,487	\$8,742	\$9,004	\$9,274	\$9,552	\$9,839	\$10,134	\$10,438
Credit Card	\$271	\$279	\$287	\$296	\$305	\$314	\$323	\$333	\$343	\$353
Utilities	\$2,477	\$2,551	\$2,628	\$2,707	\$2,788	\$2,872	\$2,958	\$3,047	\$3,138	\$3,232
Subtotal	\$12,216	\$12,582	\$12,960	\$13,349	\$13,749	\$14,162	\$14,586	\$15,024	\$15,475	\$15,939

**OPTION 4 ASSUMPTIONS - TOUR ONLY OPEN WITH NEW OPERATOR**

### 1. Attendance

1991	808,000 Projected Year 1 as is:				800,000					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Annual Attendance	640,000	620,800	602,176	590,132	584,231	578,389	572,605	566,879	561,210	555,598
% Change		-3.00%	-3.00%	-2.00%	-1.00%	-1.00%	-1.00%	-1.00%	-1.00%	-1.00%

## 2. Revenues

[illegible]

b. Other	Hotel	Food	Merchandise	Attraction	Other	Total				
- Per Capita (1991)	NA	\$21.13	\$4.56	\$15.43	\$5.62	NA				
- Inflation	3.00%	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30	1.34

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
- Per Capita Projections										
Admissions	\$4.86	\$5.01	\$5.16	\$5.31	\$5.47	\$5.63	\$5.80	\$5.98	\$6.16	\$6.34
Food	\$11.25	\$11.59	\$11.94	\$12.29	\$12.66	\$13.04	\$13.43	\$13.84	\$14.25	\$14.68
Merchandise	\$3.00	\$3.09	\$3.18	\$3.28	\$3.38	\$3.48	\$3.58	\$3.69	\$3.80	\$3.91
Other	\$1.25	\$1.29	\$1.33	\$1.37	\$1.41	\$1.45	\$1.49	\$1.54	\$1.58	\$1.63

### 3. Direct Operating Expenses

**n. Hotel - Assumes 1/3 labor expense is variable.**

**Assumes non-labor expense 1/2 variable. With CPI adjustment net drop equals 7%.**

[illegible]

b. Cost of Goods Sold - Assumes attraction industry standards for food and beverage and merchandise adjusted to reflect Disney historical figures.

	Percent
Food	30.00%
Merchandise	50.00%
Other	25.00%

c. Other Expenses - Assumes 1/2 all expenses variable. Based on change in gross revenues. Plus inflation.

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Other Exp. Adj.	-5.00%	2.96%	2.95%	3.47%	3.98%	3.98%	3.99%	3.98%	3.99%	3.99%
Other Non-Labor Adj.	-5.00%									

d. Total Direct Expenses

Labor Expense	\$5,900,000	\$6,074,356	\$6,253,840	\$6,470,870	\$6,728,702	\$6,996,838	\$7,275,705	\$7,565,614	\$7,867,124	\$8,180,632
Non-Labor Expense	\$4,700,000	\$4,838,894	\$4,981,872	\$5,154,761	\$5,360,152	\$5,573,753	\$5,795,901	\$6,026,845	\$6,267,031	\$6,516,775

4. Indirect Operating Expenses

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
a. Undistr. Exp.										
G & A	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305
Repairs & Mnt.	\$4,853	\$4,999	\$5,149	\$5,303	\$5,462	\$5,626	\$5,795	\$5,969	\$6,148	\$6,332
Utilities	\$1,902	\$1,959	\$2,018	\$2,078	\$2,141	\$2,205	\$2,271	\$2,339	\$2,409	\$2,482
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Subtotal	\$7,755	\$7,988	\$8,227	\$8,474	\$8,728	\$8,990	\$9,260	\$9,538	\$9,824	\$10,119

b. Allocated Expenses - Assume no corporate G & A allocation. Corporate G & A replaced with management contract at 4% gross revenues. Assume marketing consistent with attraction industry standards, or 6% to 9% gross, assume 7%.

	1991
G & A	\$2,514,000
Management Fee	\$0
Marketing	\$5,003,000
Subtotal	\$7,517,000



**QUEEN MARY**

**OPTION 1 - ENTERTAINMENT CENTER**

**4% INFLATION SCENARIO**

**30 YEAR LEASE**

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- THE INFORMATION IN THIS REPORT IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY. •
- THIS IS NOT A PROJECTION OF EXPECTED RESULTS. THE ATTACHED ASSUMPTIONS •
- STATEMENT BY KRM IS AN INTEGRAL PART OF THIS ANALYSIS •

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INVESTMENT ASSUMPTIONS -----			1992\$ Budget	Start Year	End Year	Number of employees	Resale Cycle
Pre-Development Costs							
Planning & Predevelopment			1,000,000	1992	1992		0 yrs
Infrastructure			0	1992	1992		0 yrs
Area Development			0	1992	1992		0 yrs
Parking Structure	# Spaces	Dev. Cost \$/Space					
Phase 1	0	\$0	0	1992	1992		0 yrs
Phase 2	0	\$0	0	1992	1992		0 yrs
Phase 3	0	\$0	0	1992	1992		0 yrs
Entertainment Center Development	Sq.Ft.	\$/Sq.Ft.					
Observ. Lounge - Music Club	4,600	\$101	464,500	1992	1992		0 yrs
Queen's Salon - Dinner Theater	6,400	\$75	482,000	1992	1992		0 yrs
Royal Salon & King's View - Sport Bar	4,000	\$131	525,000	1992	1992		0 yrs
Wedding Chapel & Vict. Room - Magic Club	3,300	\$117	386,000	1992	1992		0 yrs
Chelsea Cafe - Restaurant	2,000	\$151	302,000	1992	1992		0 yrs
Brittania Salon - Comedy Club	0	\$0	0	1992	1992		0 yrs
Veranda Grill - Music/Dance Club	4,000	\$101	402,500	1992	1992		0 yrs
Promenade Cafe Lounge - Rest.	4,100	\$147	603,850	1992	1992		0 yrs
Sir Winston Room - Restaurant	3,500	\$87	305,000	1992	1992		0 yrs
Card Club							
Brittania Salon - Card Club	0	\$0	0	1992	1992		0 yrs
Other Improved Areas							
Visitor Support Area - Misc.	13,000	\$4	54,000	1992	1992		0 yrs
Rehabilitation of Entertainment Center			867,713	2007	2007		0 yrs
Deferred Maintenance							
Phase 1			5,987,045	1992	1992		0 yrs
Phase 2			21,119,175	1993	1995		0 yrs
Museum & Tour Development	Sq.Ft.	\$/Sq.Ft.					
Phase 1	15,000	\$13	200,000	1992	1992		0 yrs
Rehabilitation of Museum & Tour	15,000	\$13	200,000	2007	2007		0 yrs
Phase 3	0	\$0	0	1992	1992		0 yrs
Retail Development	Sq.Ft.	\$/Sq. Ft.					
Phase 1	11,000	\$8	90,000	1992	1992		0 yrs
Rehabilitation of Retail	11,000	\$8	90,000	2007	2007		0 yrs
Phase 3	0	\$0	0	1992	1992		0 yrs



## OPERATING ASSUMPTIONS

-----

## Utility Expenses

Annual

Cost

Telephone	\$92,000
Water	\$180,000
Gas	\$180,000
Electric	\$1,450,000

## Other Expenses

Property Taxes	500,000
Wages & Salaries	10,430,000
Advertising & Promotion	1,810,000
Maintenance & Repairs	4,853,000
Operating Supplies	680,000
Contract Entertainment	910,000
General & Administrative	1,310,000
Card Club Operating Expenses	0

Cost of Goods Sold Factor 28.2%

## GROUND LEASE ASSUMPTIONS

-----

Percentage Rents (Gross Revenue)

Minimum Rent

Land Value/Foot

Land Area (Acres)

Lease Constant

\$12.00

45

10.0%

Entertainment  
Center/Retail

Card Club

Museum  
& TourFood &  
Beverage

5.0%

5.0%

5.0%

3.0%

## REVENUES

-----

## Entertainment Center

Sales/Person

Dinner Theater

Admissions/Meals &amp; Alcohol

\$30.00

Museum &amp; Tour

Admissions

\$4.65

Other Clubs &amp; Bars

Admissions

\$11.65

Meals &amp; Alcohol

\$10.00

## Card Club Revenues

Percent  
Breakdown

Fees &amp; Rake

0.00%\*\*\* Gaming Tax Rate Applicable

Food &amp; Beverage

0.00%

Number of Card Tables

0

## Other Revenue Sources

Sales/S.F

Retail Spending Per Square Foot

\$275.00

Hotel Rooms Available

0

Daily Rate Per Room

\$0

Occupancy Rate

0.0%

Annual Hotel Revenues

\$0

## INDUCED ASSUMPTIONS

-----

## QUEEN MARY CENTER Employee &amp; Visitor Impacts to Long Beach

	Supported Rooms	Daily Rate	Annual Revenues	Additional Employees
	-----	-----	-----	-----
Hotels	100	\$80	\$2,920,000	100
Retail Spending			\$1,460,000	15

## NON-FINANCIAL ASSUMPTIONS

-----

# of Employees				
Entertainment Center/Restaurants	5/1000 sf			160
Museum & Tour	3/1000 sf			45
Card Club	4/table			0
Food/Beverage Carts				10
Retail	2/1000 sf			22
Ship Maintenance				50
Average Salary - Indirects				\$27,500
Inflation Rate				4.0%
City NPV Discount Rate				9.0%
Land Value Increase for Tax Assessment				4.00%
NPV Discount Rate for Unleveraged Cash Flow		18.0% &		20.0%
NPV Discount Rate for Leveraged Cash Flow		25.0% &		30.0%

## LOAN ASSUMPTIONS

-----

Percentage of Capital Costs Funded	0.0%
Loan Interest Rate	10.0%

## TAX RATE ASSUMPTIONS

-----

	City
Long Beach Property Tax Portion	27.5%
County Property Tax Portion	47.8%
Hotel Bed Tax Rate	10.00%
Telephone - Utility Tax Rate	5.0%
Water - Utility Tax Rate	5.0%
Gas - Utility Tax Rate	5.0%
Electric - Utility Tax Rate	8.4%
Long Beach Gaming Tax Rate	0.0%
L.A. County Sales Tax Rate	0.25%
Long Beach Sales Tax Rate	1.00%
Long Beach Miscellaneous Taxes:	
Business License Fee	\$5,000
Business License Tax Per Employee	\$8.26 /per Employee

## INDIRECT IMPACT ASSUMPTIONS

Percentage Impact from Direct Spending	110.00%
Long Beach Economic Activity Impact Factor	20.00%
L.A. County Economic Activity Impact Factor	50.00%
Long Beach Indirect Tax Portion of Economic Activity	0.50%
L.A. County Indirect Tax Portion of Economic Activity	0.25%

		(000'S)												
	30 YEAR TOTAL	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Capital Spending</b>														
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,471	3,471	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	1,557	54	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	5,987	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0
Museum & Tour Development	546	200	0	0	0	0	0	0	0	0	0	0	0	0
Retail Development	246	90	0	0	0	0	0	0	0	0	0	0	0	0
<b>Queen Mary Operational Spending</b>														
Retail Spending	259,875	0	3,025	3,146	3,272	3,403	3,539	3,680	3,828	3,981	4,140	4,306	4,478	4,657
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Induced Economic Activity</b>														
Retail Spending	77,331	0	1,460	1,518	1,579	1,642	1,708	1,776	1,847	1,921	1,998	2,078	2,161	2,248
Hotel Spending	154,662	0	2,920	3,037	3,158	3,285	3,416	3,553	3,695	3,843	3,996	4,156	4,322	4,495
<b>Direct Economic Activity</b>														
Capital Improvements		10,802	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	624,926	0	11,853	11,993	12,620	13,282	13,979	14,851	15,489	16,157	16,857	17,591	18,193	18,819
Food & Beverage Sales	787,355	0	13,500	14,248	15,034	15,861	16,729	17,763	18,600	19,476	20,392	21,350	22,204	23,092
Card Club Fees & Rake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Merchandise Sales	259,875	0	3,025	3,146	3,272	3,403	3,539	3,680	3,828	3,981	4,140	4,306	4,478	4,657
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Utilization Factors</b>														
Entertainment Center Attendance		0	750,000	770,000	790,000	810,000	830,000	860,000	870,000	880,000	890,000	900,000	900,000	900,000
Dinner Theater Attendance		0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		0	670,000	649,900	630,403	611,491	593,146	575,352	558,091	541,349	525,108	509,355	494,074	479,252
Card Club Revenue/Table		\$0	\$300,000	\$325,000	\$350,000	\$375,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		0%	80%	79%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

		(000'S)													
		30 YEAR TOTAL	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Capital Spending															
-----															
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,471	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	1,557	0	0	1,503	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Museum & Tour Development	546	0	0	346	0	0	0	0	0	0	0	0	0	0	0
Retail Development	246	0	0	156	0	0	0	0	0	0	0	0	0	0	0
Queen Mary Operational Spending															
-----															
Retail Spending	259,875	4,843	5,037	5,238	10,896	11,332	11,785	12,256	12,746	13,256	13,787	14,338	14,912	15,508	
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Induced Economic Activity															
-----															
Retail Spending	77,331	2,338	2,431	2,528	2,629	2,735	2,844	2,958	3,076	3,199	3,327	3,460	3,598	3,742	
Hotel Spending	154,662	4,675	4,862	5,056	5,259	5,469	5,688	5,915	6,152	6,398	6,654	6,920	7,197	7,485	
Direct Economic Activity															
-----															
Capital Improvements		0	0	2,005	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	624,926	19,469	20,144	20,845	21,573	22,329	23,115	23,931	24,779	25,660	26,575	27,525	28,513	29,539	
Food & Beverage Sales	787,355	24,015	24,976	25,975	27,014	28,095	29,219	30,387	31,603	32,867	34,182	35,549	36,971	38,450	
Card Club Fees & Rake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Merchandise Sales	259,875	4,843	5,037	5,238	10,896	11,332	11,785	12,256	12,746	13,256	13,787	14,338	14,912	15,508	
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilization Factors															
-----															
Entertainment Center Attendance		900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
Dinner Theater Attendance		200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		464,874	450,928	437,400	424,278	411,550	399,203	387,227	375,611	364,342	353,412	342,810	332,525	322,550	
Card Club Revenue/Table		\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>DIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$10,802	\$35,418	\$36,708	\$38,845	\$32,545	\$34,247	\$36,294	\$37,917	\$39,614	\$41,389	\$43,246	\$44,875	\$46,568
Jobs		0	403	403	403	403	403	403	403	403	403	403	403	403
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	10,472	0	165	174	183	193	203	214	224	235	245	257	267	277
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	0	144	150	156	162	169	176	183	190	198	206	214	222
Business License Fees	450	0	8	9	9	9	10	10	11	11	11	12	12	13
Total Fiscal Revenue	25,716	\$0	\$318	\$476	\$497	\$519	\$542	\$568	\$592	\$616	\$643	\$670	\$696	\$724
<b>L.A. COUNTY</b>														
Economic Activity		\$10,802	\$35,418	\$36,708	\$38,845	\$32,545	\$34,247	\$36,294	\$37,917	\$39,614	\$41,389	\$43,246	\$44,875	\$46,568
Jobs		0	403	403	403	403	403	403	403	403	403	403	403	403
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	2,618	0	41	43	46	48	51	54	56	59	61	64	67	69
Total Fiscal Revenue	15,038	\$0	\$41	\$292	\$304	\$317	\$330	\$344	\$358	\$373	\$388	\$404	\$420	\$437
<b>INDUCED IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$0	\$4,380	\$4,555	\$4,737	\$4,927	\$5,124	\$5,329	\$5,542	\$5,764	\$5,994	\$6,234	\$6,483	\$6,743
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$773	\$0	\$15	\$15	\$16	\$16	\$17	\$18	\$18	\$19	\$20	\$21	\$22	\$22
Hotel Bed Taxes	15,466	0	292	304	316	328	342	355	369	384	400	416	432	450
Total Fiscal Revenue	16,239	\$0	\$307	\$319	\$332	\$345	\$359	\$373	\$388	\$403	\$420	\$436	\$454	\$472
<b>L.A. COUNTY</b>														
Economic Activity		\$0	\$4,380	\$4,555	\$4,737	\$4,927	\$5,124	\$5,329	\$5,542	\$5,764	\$5,994	\$6,234	\$6,483	\$6,743
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$193	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$5	\$5	\$5	\$5	\$5	\$6
Total Fiscal Revenue	\$193	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$5	\$5	\$5	\$5	\$5	\$6
<b>INDIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$2,376	\$8,755	\$9,078	\$9,588	\$8,244	\$8,662	\$9,157	\$9,561	\$9,983	\$10,424	\$10,886	\$11,299	\$11,728
Jobs		26	96	99	105	90	94	100	104	109	114	119	123	128
Fiscal Revenues														
Indirect Taxes	\$2,121	\$0	\$44	\$45	\$48	\$41	\$43	\$46	\$48	\$50	\$52	\$54	\$56	\$59
<b>L.A. COUNTY</b>														
Economic Activity		\$5,941	\$21,889	\$22,695	\$23,970	\$20,610	\$21,654	\$22,893	\$23,902	\$24,958	\$26,061	\$27,214	\$28,247	\$29,321
Jobs		65	239	248	261	225	236	250	261	272	284	297	308	320
Fiscal Revenues														
Indirect Taxes	\$2,652	\$0	\$55	\$57	\$60	\$52	\$54	\$57	\$60	\$62	\$65	\$68	\$71	\$73



	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>DIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$48,328	\$50,157	\$54,063	\$59,483	\$61,756	\$64,118	\$66,575	\$69,128	\$71,783	\$74,543	\$77,412	\$80,395	\$83,497
Jobs		403	403	403	436	436	436	436	436	436	436	436	436	436
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	10,472	289	300	312	379	394	410	426	443	461	480	499	519	540
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	231	240	250	260	270	281	293	304	316	329	342	356	370
Business License Fees	450	13	14	14	15	16	17	17	18	19	20	20	21	22
Total Fiscal Revenue	25,716	\$753	\$783	\$815	\$902	\$938	\$976	\$1,015	\$1,056	\$1,098	\$1,142	\$1,187	\$1,235	\$1,284
<b>L.A. COUNTY</b>														
Economic Activity		\$48,328	\$50,157	\$54,063	\$59,483	\$61,756	\$64,118	\$66,575	\$69,128	\$71,783	\$74,543	\$77,412	\$80,395	\$83,497
Jobs		403	403	403	436	436	436	436	436	436	436	436	436	436
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	2,618	72	75	78	95	99	103	107	111	115	120	125	130	135
Total Fiscal Revenue	15,038	\$455	\$473	\$492	\$525	\$546	\$568	\$591	\$614	\$639	\$665	\$691	\$719	\$748
<b>INDUCED IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$7,013	\$7,293	\$7,585	\$7,888	\$8,204	\$8,532	\$8,873	\$9,228	\$9,597	\$9,981	\$10,380	\$10,795	\$11,227
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$773	\$23	\$24	\$25	\$26	\$27	\$28	\$30	\$31	\$32	\$33	\$35	\$36	\$37
Hotel Bed Taxes	15,466	468	486	506	526	547	569	592	615	640	665	692	720	748
Total Fiscal Revenue	16,239	\$491	\$511	\$531	\$552	\$574	\$597	\$621	\$646	\$672	\$699	\$727	\$756	\$786
<b>L.A. COUNTY</b>														
Economic Activity		\$7,013	\$7,293	\$7,585	\$7,888	\$8,204	\$8,532	\$8,873	\$9,228	\$9,597	\$9,981	\$10,380	\$10,795	\$11,227
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$193	\$6	\$6	\$6	\$7	\$7	\$7	\$7	\$8	\$8	\$8	\$9	\$9	\$9
Total Fiscal Revenue	\$193	\$6	\$6	\$6	\$7	\$7	\$7	\$7	\$8	\$8	\$8	\$9	\$9	\$9
<b>INDIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$12,175	\$12,639	\$13,563	\$14,822	\$15,391	\$15,983	\$16,598	\$17,238	\$17,904	\$18,595	\$19,314	\$20,062	\$20,839
Jobs		133	138	148	162	168	174	181	188	195	203	211	219	227
Fiscal Revenues														
Indirect Taxes	\$2,121	\$61	\$63	\$68	\$74	\$77	\$80	\$83	\$86	\$90	\$93	\$97	\$100	\$104
<b>L.A. COUNTY</b>														
Economic Activity		\$30,437	\$31,597	\$33,906	\$37,054	\$38,478	\$39,958	\$41,496	\$43,096	\$44,759	\$46,488	\$48,286	\$50,155	\$52,098
Jobs		332	345	370	404	420	436	453	470	488	507	527	547	568
Fiscal Revenues														
Indirect Taxes	\$2,652	\$76	\$79	\$85	\$93	\$96	\$100	\$104	\$108	\$112	\$116	\$121	\$125	\$130

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>TOTAL IMPACTS</b> -----														
<b>LONG BEACH</b> -----														
Economic Activity		\$13,178	\$48,553	\$50,341	\$53,171	\$45,716	\$48,033	\$50,780	\$53,020	\$55,361	\$57,808	\$60,366	\$62,657	\$65,039
Jobs		26	613	616	622	607	612	617	621	626	631	636	640	645
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	11,246	0	180	189	199	209	220	232	243	254	265	277	288	300
Hotel Bed Taxes	15,466	0	292	304	316	328	342	355	369	384	400	416	432	450
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	0	144	150	156	162	169	176	183	190	198	206	214	222
Business License Fees	450	0	8	9	9	9	10	10	11	11	11	12	12	13
Indirect Taxes	2,121	0	44	45	48	41	43	46	48	50	52	54	56	59
Total Fiscal Revenue	\$44,077	\$0	\$668	\$840	\$877	\$905	\$944	\$986	\$1,027	\$1,070	\$1,114	\$1,160	\$1,207	\$1,255
<b>L.A. COUNTY</b> -----														
Economic Activity		\$16,743	\$61,686	\$63,958	\$67,553	\$58,082	\$61,025	\$64,516	\$67,361	\$70,335	\$73,444	\$76,694	\$79,605	\$82,631
Jobs		65	756	765	779	742	753	767	778	789	801	814	825	837
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	2,811	0	45	47	50	52	55	58	61	63	66	69	72	75
Indirect Taxes	2,652	0	55	57	60	52	54	57	60	62	65	68	71	73
Total Fiscal Revenue	\$17,883	\$0	\$100	\$353	\$368	\$373	\$389	\$406	\$423	\$440	\$459	\$478	\$497	\$516

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOTAL IMPACTS														
-----														
LONG BEACH														
-----														
Economic Activity		\$67,515	\$70,089	\$75,210	\$82,193	\$85,350	\$88,633	\$92,046	\$95,594	\$99,284	\$103,119	\$107,107	\$111,253	\$115,563
Jobs		650	655	665	712	719	725	732	739	746	753	761	769	778
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	11,246	312	324	337	405	422	438	456	474	493	513	533	555	577
Hotel Bed Taxes	15,466	468	486	506	526	547	569	592	615	640	665	692	720	748
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	231	240	250	260	270	281	293	304	316	329	342	356	370
Business License Fees	450	13	14	14	15	16	17	17	18	19	20	20	21	22
Indirect Taxes	2,121	61	63	68	74	77	80	83	86	90	93	97	100	104
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Total Fiscal Revenue	\$44,077	\$1,305	\$1,357	\$1,413	\$1,529	\$1,590	\$1,653	\$1,719	\$1,788	\$1,859	\$1,933	\$2,011	\$2,091	\$2,174
L.A. COUNTY														
-----														
Economic Activity		\$85,777	\$89,047	\$95,554	\$104,425	\$108,437	\$112,608	\$116,944	\$121,452	\$126,139	\$131,012	\$136,078	\$141,346	\$146,822
Jobs		849	862	887	955	970	987	1,003	1,021	1,039	1,058	1,077	1,098	1,119
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	2,811	78	81	84	101	105	110	114	119	123	128	133	139	144
Indirect Taxes	2,652	76	79	85	93	96	100	104	108	112	116	121	125	130
		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Fiscal Revenue	\$17,883	\$537	\$558	\$583	\$624	\$649	\$675	\$702	\$730	\$759	\$789	\$820	\$853	\$887

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>PRE-FINANCING CASH FLOW (\$000)</b>														
Revenue														
Admissions - Ent. Center	547,034	0	8,738	9,329	9,955	10,615	11,312	12,190	12,825	13,491	14,190	14,923	15,520	16,141
Admissions - Museum & Tours	102,415	0	3,116	3,143	3,171	3,198	3,227	3,255	3,284	3,313	3,342	3,371	3,401	3,431
Food & Beverage	469,557	0	7,500	8,008	8,545	9,111	9,710	10,463	11,008	11,580	12,180	12,810	13,322	13,855
Merchandise	259,875	0	3,025	3,146	3,272	3,403	3,539	3,680	3,828	3,981	4,140	4,306	4,478	4,657
Dinner Theater	317,798	0	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540	8,881	9,237
Card Club Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(-) Cost of Goods Sold	(295,319)	0	(4,660)	(4,905)	(5,162)	(5,432)	(5,716)	(6,047)	(6,325)	(6,615)	(6,918)	(7,235)	(7,524)	(7,825)
Net Revenues	1,401,360	0	23,718	24,961	26,269	27,644	29,091	30,841	32,211	33,645	35,145	36,715	38,078	39,495
Operating Expenses														
Property Taxes	30,619	0	525	546	567	597	628	665	695	726	759	793	822	853
Wages & Salaries	609,167	0	10,443	10,853	11,278	11,868	12,489	13,235	13,827	14,445	15,092	15,769	16,362	16,979
Advertising & Promotion	105,942	0	1,816	1,888	1,961	2,064	2,172	2,302	2,405	2,512	2,625	2,742	2,846	2,953
Maintenance & Repair	291,341	0	4,995	5,191	5,394	5,676	5,973	6,330	6,613	6,909	7,218	7,542	7,825	8,120
Operating Supplies	39,728	0	681	708	735	774	814	863	902	942	984	1,028	1,067	1,107
Contract Entertainment	52,971	0	908	944	981	1,032	1,086	1,151	1,202	1,256	1,312	1,371	1,423	1,476
General & Administrative	75,323	0	1,291	1,342	1,394	1,467	1,544	1,637	1,710	1,786	1,866	1,950	2,023	2,099
Card Club Operating Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	100,742	0	1,902	1,978	2,057	2,139	2,225	2,314	2,407	2,503	2,603	2,707	2,815	2,928
Total Operating Expenses	1,305,833	0	22,561	23,449	24,367	25,617	26,931	28,497	29,760	31,079	32,460	33,903	35,184	36,516
Net Operating Income	95,527	0	1,157	1,512	1,902	2,027	2,160	2,344	2,452	2,566	2,686	2,812	2,894	2,979
Other Expenses														
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Lease Payments	79,978	0	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
Adjusted Net Operating Income	15,550	0	(1,195)	(840)	(450)	(325)	(192)	(8)	100	214	334	460	542	627
Capital Costs														
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0
Leasehold Improvements	5,820	3,815	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	5,987	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0
Total Capital Costs	35,086	10,802	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0
Pre-Financing Cash Flow	(19,537)	(10,802)	(8,235)	(8,161)	(8,369)	(325)	(192)	(8)	100	214	334	460	542	627
Cumulative Cash Flow		(10,802)	(19,037)	(27,198)	(35,568)	(35,893)	(36,085)	(36,093)	(35,994)	(35,780)	(35,446)	(34,986)	(34,444)	(33,817)
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Free & Clear Cash (NOI/Cost)		0.00%	6.48%	6.01%	5.75%	6.13%	6.53%	7.08%	7.41%	7.76%	8.12%	8.50%	8.75%	9.01%
Adjusted NOI/Cost		0.00%	-6.70%	-3.34%	-1.36%	-0.98%	-0.58%	-0.03%	0.30%	0.65%	1.01%	1.39%	1.64%	1.90%
Internal Rate of Return	-3.85%													
Net Present Value @ 18.0%	(\$23,807)													
Net Present Value @ 20.0%	(\$23,089)													

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>PRE-FINANCING CASH FLOW (\$000)</b>														
Revenue														
Admissions - Ent. Center	547,034	16,787	17,458	18,157	18,883	19,638	20,424	21,241	22,090	22,974	23,893	24,849	25,843	26,876
Admissions - Museum & Tours	102,415	3,461	3,491	3,522	3,553	3,584	3,616	3,648	3,680	3,712	3,745	3,778	3,811	3,845
Food & Beverage	469,557	14,409	14,986	15,585	16,208	16,857	17,531	18,232	18,962	19,720	20,509	21,329	22,182	23,070
Merchandise	259,875	4,843	5,037	5,238	5,438	5,638	5,838	6,038	6,238	6,438	6,638	6,838	7,038	7,238
Dinner Theater	317,798	9,606	9,990	10,390	10,806	11,238	11,687	12,155	12,641	13,147	13,673	14,220	14,788	15,380
Card Club Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(-) Cost of Goods Sold	(295,319)	(8,138)	(8,464)	(8,802)	(9,151)	(9,511)	(9,882)	(10,265)	(10,660)	(11,067)	(11,487)	(11,919)	(12,363)	(12,819)
Net Revenues	1,401,360	40,968	42,499	44,090	45,655	47,193	48,705	50,191	51,653	53,093	54,512	55,919	57,314	58,697
Operating Expenses														
Property Taxes	30,619	886	919	954	1,088	1,130	1,173	1,218	1,265	1,313	1,364	1,416	1,470	1,527
Wages & Salaries	609,167	17,619	18,285	18,978	21,652	22,478	23,337	24,230	25,159	26,124	27,127	28,171	29,255	30,383
Advertising & Promotion	105,942	3,064	3,180	3,300	3,766	3,909	4,059	4,214	4,375	4,543	4,718	4,899	5,088	5,284
Maintenance & Repair	291,341	8,427	8,745	9,076	10,355	10,751	11,161	11,588	12,032	12,494	12,974	13,473	13,992	14,531
Operating Supplies	39,728	1,149	1,193	1,238	1,412	1,466	1,522	1,580	1,641	1,704	1,769	1,837	1,908	1,981
Contract Entertainment	52,971	1,532	1,590	1,650	1,883	1,955	2,029	2,107	2,188	2,272	2,359	2,450	2,544	2,642
General & Administrative	75,323	2,179	2,261	2,347	2,677	2,779	2,886	2,996	3,111	3,230	3,354	3,483	3,617	3,757
Card Club Operating Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	100,742	3,045	3,167	3,294	3,425	3,562	3,705	3,853	4,007	4,168	4,334	4,508	4,688	4,875
Total Operating Expenses	1,305,833	37,901	39,340	40,837	46,259	48,031	49,872	51,787	53,778	55,848	57,999	60,236	62,562	64,980
Net Operating Income	95,527	3,067	3,159	3,253	3,396	3,500	3,608	3,719	3,835	3,955	4,080	4,209	4,343	4,482
Other Expenses														
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Lease Payments	79,978	2,352	2,352	2,352	2,477	2,571	2,668	2,769	2,874	2,983	3,097	3,215	3,337	3,465
Adjusted Net Operating Income	15,550	715	806	901	919	930	940	950	961	972	983	994	1,006	1,017
Capital Costs														
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Leasehold Improvements	5,820	0	0	2,005	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Capital Costs	35,086	0	0	2,005	0	0	0	0	0	0	0	0	0	0
Pre-Financing Cash Flow	(19,537)	715	806	(1,104)	919	930	940	950	961	972	983	994	1,006	1,017
Cumulative Cash Flow		(33,102)	(32,296)	(33,399)	(32,480)	(31,550)	(30,610)	(29,660)	(28,699)	(27,727)	(26,744)	(25,750)	(24,745)	(23,727)
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Free & Clear Cash (NOI/Cost)		9.27%	9.55%	9.27%	9.68%	9.98%	10.28%	10.60%	10.93%	11.27%	11.63%	12.00%	12.38%	12.77%
Adjusted NOI/Cost		2.16%	2.44%	2.57%	2.62%	2.65%	2.68%	2.71%	2.74%	2.77%	2.80%	2.83%	2.87%	2.90%
Internal Rate of Return	-3.85%													
Net Present Value @ 18.0%	(\$23,807)													
Net Present Value @ 20.0%	(\$23,089)													

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>LEVERAGED CASH FLOW (\$000)</b>														
Recap:														
Annual Pre-Financing Cash Flow		(10,802)	(8,235)	(8,161)	(8,369)	(325)	(192)	(8)	100	214	334	460	542	627
Development Financing														
{+} Draws	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Interest Payments	0		0	0	0	0	0	0	0	0	0	0	0	0
{-} Principal Repayment	0		0	0	0	0	0	0	0	0	0	0	0	0
Net Dev. Financing (Repayment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow (Equity)	(19,537)	(10,802)	(8,235)	(8,161)	(8,369)	(325)	(192)	(8)	100	214	334	460	542	627
Cumulative Cash Flow		(10,802)	(19,037)	(27,198)	(35,568)	(35,893)	(36,085)	(36,093)	(35,994)	(35,780)	(35,446)	(34,986)	(34,444)	(33,817)
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Debt Service Coverage		n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m
Cumulative Equity Investment		10,802	17,842	25,163	33,082	33,082	33,082	33,082	33,082	33,082	33,082	33,082	33,082	33,082
Return on Equity (NOCF/Equity)			-46.16%	-32.43%	-25.30%	-0.98%	-0.58%	-0.03%	0.30%	0.65%	1.01%	1.39%	1.64%	1.90%
Internal Rate of Return	-3.85%													
Net Present Value @ 25.0%	(\$21,353)													
Net Present Value @ 30.0%	(\$19,766)													

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
LEVERAGED CASH FLOW (\$000)														
Recap:														
Annual Pre-Financing Cash Flow		715	806	(1,104)	919	930	940	950	961	972	983	994	1,006	1,017
Development Financing														
{+} Draws	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Interest Payments	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Principal Repayment	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Dev. Financing (Repayment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow (Equity)	(19,537)	715	806	(1,104)	919	930	940	950	961	972	983	994	1,006	1,017
Cumulative Cash Flow		(33,102)	(32,296)	(33,399)	(32,480)	(31,550)	(30,610)	(29,660)	(28,699)	(27,727)	(26,744)	(25,750)	(24,745)	(23,727)
ECONOMIC RETURNS & INDICES														
Debt Service Coverage		n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m
Cumulative Equity Investment		33,082	33,082	35,086	35,086	35,086	35,086	35,086	35,086	35,086	35,086	35,086	35,086	35,086
Return on Equity (NOCF/Equity)		2.16%	2.44%	-3.15%	2.62%	2.65%	2.68%	2.71%	2.74%	2.77%	2.80%	2.83%	2.87%	2.90%
Internal Rate of Return	-3.85%													
Net Present Value @ 25.0%	(\$21,353)													
Net Present Value @ 30.0%	(\$19,766)													

APPENDIX

**QUEEN MARY**  
**OPTION 2 - ENTERTAINMENT CENTER & CARD CLUB**  
**NO INFLATION SCENARIO**  
**30 YEAR LEASE**

Investment Assumptions	Page 2
Operating Assumptions	Page 3
Indirect Impacts, Tax Rates & Other Assumptions	Page 4
Total Economic Activity (1992-2017 Illustrated)	Page 5- 6
Economic Activity & Fiscal Impacts by Component (1992-2017 Illustrated)	Page 7- 8
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Unleveraged Financial Proforma (1992-2017 Illustrated)	Page 11-12
Leveraged Financial Proforma (1992-2017 Illustrated)	Page 13-14

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- THE INFORMATION IN THIS REPORT IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY. •
- THIS IS NOT A PROJECTION OF EXPECTED RESULTS. THE ATTACHED ASSUMPTIONS •
- STATEMENT BY KRM IS AN INTEGRAL PART OF THIS ANALYSIS •

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## INVESTMENT ASSUMPTIONS

## Pre-Development Costs

Planning & Predevelopment  
Infrastructure  
Area Development

1992\$ Budget

Start  
YearEnd  
YearNumber of  
employeesResale  
Cycle

1,000,000

0

0

1992

1992

1992

1992

1992

1992

0 yrs

0 yrs

0 yrs

## Parking Structure

# Spaces

Dev. Cost  
\$/Space

Phase 1

0

\$0

0

1992

1992

0 yrs

Phase 2

0

\$0

0

1992

1992

0 yrs

Phase 3

0

\$0

0

1992

1992

0 yrs

## Entertainment Center Development

Sq.Ft.

\$/Sq.Ft.

Observ. Lounge - Music Club

4,600

\$111

511,000

1992

1992

0 yrs

Queen's Salon - Dinner Theater

6,400

\$75

482,000

1992

1992

0 yrs

Royal Salon &amp; King's View - Sport Bar

4,000

\$130

520,000

1992

1992

0 yrs

Wedding Chapel &amp; Vict. Room - Magic Club

3,300

\$115

381,000

1992

1992

0 yrs

Chelsea Cafe - Restaurant

2,000

\$150

300,000

1992

1992

0 yrs

Brittania Salon - Comedy Club

0

\$0

0

1992

1992

0 yrs

Veranda Grill - Music/Dance Club

4,000

\$101

402,500

1992

1992

0 yrs

Promenade Cafe Lounge - Rest.

4,100

\$147

603,850

1992

1992

0 yrs

Sir Winston Room - Restaurant

3,500

\$87

305,000

1992

1992

0 yrs

## Card Club

Brittania Salon - Card Club

9,000

\$121

1,090,000

1992

1992

0 yrs

## Other Improved Areas

Visitor Support Area - Misc.

13,000

\$4

54,000

1992

1992

0 yrs

Rehabilitation of Entertainment Center

876,338

2007

2007

0 yrs

## Deferred Maintenance

Phase 1

5,987,045

1992

1992

0 yrs

Phase 2

21,119,175

1993

1995

0 yrs

## Museum &amp; Tour Development

Sq.Ft.

\$/Sq.Ft.

Phase 1

15,000

\$13

200,000

1992

1992

0 yrs

Rehabilitation of Museum &amp; Tour

15,000

\$13

200,000

2007

2007

0 yrs

Phase 3

0

\$0

0

1992

1992

0 yrs

## Retail Development

Sq.Ft.

\$/Sq. Ft.

Phase 1

11,000

\$8

90,000

1992

1992

0 yrs

Rehabilitation of Retail

11,000

\$8

90,000

2007

2007

0 yrs

Phase 3

0

\$0

0

1992

1992

0 yrs

## OPERATING ASSUMPTIONS

## -----

## Utility Expenses

	Annual Cost
Telephone	\$92,000
Water	\$180,000
Gas	\$180,000
Electric	\$1,450,000

## Other Expenses

Property Taxes	500,000
Wages & Salaries	9,970,000
Advertising & Promotion	1,730,000
Maintenance & Repairs	4,853,000
Operating Supplies	650,000
Contract Entertainment	870,000
General & Administrative	1,230,000
Card Club Operating Expenses	10,500,000

Cost of Goods Sold Factor 28.2%

## GROUND LEASE ASSUMPTIONS

## -----

Percentage Rents (Gross Revenue)

Minimum Rent	
Land Value/Foot	\$12.00
Land Area (Acres)	45
Lease Constant	10.0%

Entertainment Center/Retail	Card Club	Museum & Tour	Food & Beverage
5.0%	5.0%	5.0%	3.0%

## REVENUES

## -----

## Entertainment Center

## Sales/Person

Dinner Theater	
Admissions/Meals & Alcohol	\$30.00
Museum & Tour	
Admissions	\$4.65
Other Clubs & Bars	
Admissions	\$10.48
Meals & Alcohol	\$9.70

## Card Club Revenues

Percent  
Breakdown

Fees & Rake	80.00%*** Gaming Tax Rate Applicable
Food & Beverage	20.00%
Number of Card Tables	50

## Other Revenue Sources

## Sales/S.F

Retail Spending Per Square Foot	\$261.25
Hotel Rooms Available	0
Daily Rate Per Room	\$0
Occupancy Rate	0.0%
Annual Hotel Revenues	\$0

## INDUCED ASSUMPTIONS

## QUEEN MARY CENTER Employee &amp; Visitor Impacts to Long Beach

	Supported Rooms	Daily Rate	Annual Revenues	Additional Employees
Hotels	100	\$80	\$2,920,000	100
Retail Spending			\$1,460,000	15

## NON-FINANCIAL ASSUMPTIONS

# of Employees			
Entertainment Center/Restaurants	5/1000 sf		160
Museum & Tour	3/1000 sf		45
Card Club	4/table		200
Food/Beverage Carts			10
Retail	2/1000 sf		22
Ship Maintenance			50

Average Salary - Indirects		\$27,500
Inflation Rate		0.0%
City NPV Discount Rate		9.0%
Land Value Increase for Tax Assessment		4.00%
NPV Discount Rate for Unleveraged Cash Flow	18.0% &	20.0%
NPV Discount Rate for Leveraged Cash Flow	25.0% &	30.0%

## LOAN ASSUMPTIONS

Percentage of Capital Costs Funded	70.0%
Loan Interest Rate	10.0%

## TAX RATE ASSUMPTIONS

	City
Long Beach Property Tax Portion	27.5%
County Property Tax Portion	47.8%
Hotel Bed Tax Rate	10.00%
Telephone - Utility Tax Rate	5.0%
Water - Utility Tax Rate	5.0%
Gas - Utility Tax Rate	5.0%
Electric - Utility Tax Rate	8.4%
Long Beach Gaming Tax Rate	0.0%
L.A. County Sales Tax Rate	0.25%
Long Beach Sales Tax Rate	1.00%
Long Beach Miscellaneous Taxes:	
Business License Fee	\$5,000
Business License Tax Per Employee	\$8.26 /per Employee

## INDIRECT IMPACT ASSUMPTIONS

Percentage Impact from Direct Spending	110.00%
Long Beach Economic Activity Impact Factor	20.00%
L.A. County Economic Activity Impact Factor	50.00%
Long Beach Indirect Tax Portion of Economic Activity	0.50%
L.A. County Indirect Tax Portion of Economic Activity	0.25%

		(000'S)													
		30 YEAR TOTAL	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Capital Spending															
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,505	3,505	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	1,090	1,090	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	930	54	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	5,987	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0	0
Museum & Tour Development	400	200	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Development	180	90	0	0	0	0	0	0	0	0	0	0	0	0	0
Queen Mary Operational Spending															
Retail Spending	123,571	0	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Induced Economic Activity															
Retail Spending	42,340	0	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460
Hotel Spending	84,680	0	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
Direct Economic Activity															
Capital Improvements		11,926	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	327,633	0	10,976	11,092	11,211	11,332	11,457	11,688	11,713	11,740	11,769	11,800	11,729	11,661	11,661
Food & Beverage Sales	534,365	0	16,275	16,719	17,163	17,607	18,051	18,342	18,439	18,536	18,633	18,730	18,730	18,730	18,730
Card Club Fees & Rake	454,000	0	12,000	13,000	14,000	15,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
Merchandise Sales	123,571	0	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilization Factors															
Entertainment Center Attendance		0	750,000	770,000	790,000	810,000	830,000	860,000	870,000	880,000	890,000	900,000	900,000	900,000	900,000
Dinner Theater Attendance		0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		0	670,000	649,900	630,403	611,491	593,146	575,352	558,091	541,349	525,108	509,355	494,074	479,252	479,252
Card Club Revenue/Table		\$0	\$300,000	\$325,000	\$350,000	\$375,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		0%	80%	79%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

		(000'S)												
	30 YEAR TOTAL	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Capital Spending</b>														
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,505	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	1,090	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	930	0	0	876	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	0	0	0	0	0	0	0	0	0	0	0	0	0
Museum & Tour Development	400	0	0	200	0	0	0	0	0	0	0	0	0	0
Retail Development	180	0	0	90	0	0	0	0	0	0	0	0	0	0
<b>Queen Mary Operational Spending</b>														
Retail Spending	123,571	2,874	2,874	2,874	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Induced Economic Activity</b>														
Retail Spending	42,340	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460
Hotel Spending	84,680	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
<b>Direct Economic Activity</b>														
Capital Improvements	0	0	0	1,166	0	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	327,633	11,594	11,529	11,466	11,405	11,346	11,288	11,233	11,179	11,126	11,075	11,026	10,978	10,932
Food & Beverage Sales	534,365	18,730	18,730	18,730	18,730	18,730	18,730	18,730	18,730	18,730	18,730	18,730	18,730	18,730
Card Club Fees & Rake	454,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
Merchandise Sales	123,571	2,874	2,874	2,874	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Utilization Factors</b>														
Entertainment Center Attendance		900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
Dinner Theater Attendance		200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		464,874	450,928	437,400	424,278	411,550	399,203	387,227	375,611	364,342	353,412	342,810	332,525	322,550
Card Club Revenue/Table		\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>DIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$11,926	\$49,164	\$50,724	\$52,287	\$46,813	\$48,381	\$48,904	\$49,025	\$49,149	\$49,276	\$49,404	\$49,333	\$49,264
Jobs		0	603	603	603	603	603	603	603	603	603	603	603	603
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	6,579	0	191	196	200	205	209	212	213	214	215	216	216	216
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	0	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	293	0	10	10	10	10	10	10	10	10	10	10	10	10
<b>Total Fiscal Revenue</b>	<b>18,206</b>	<b>\$0</b>	<b>\$346</b>	<b>\$493</b>	<b>\$503</b>	<b>\$514</b>	<b>\$524</b>	<b>\$534</b>	<b>\$541</b>	<b>\$549</b>	<b>\$558</b>	<b>\$566</b>	<b>\$574</b>	<b>\$582</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$11,926	\$49,164	\$50,724	\$52,287	\$46,813	\$48,381	\$48,904	\$49,025	\$49,149	\$49,276	\$49,404	\$49,333	\$49,264
Jobs		0	603	603	603	603	603	603	603	603	603	603	603	603
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	1,645	0	48	49	50	51	52	53	53	54	54	54	54	54
<b>Total Fiscal Revenue</b>	<b>14,065</b>	<b>\$0</b>	<b>\$48</b>	<b>\$298</b>	<b>\$309</b>	<b>\$320</b>	<b>\$332</b>	<b>\$344</b>	<b>\$356</b>	<b>\$368</b>	<b>\$381</b>	<b>\$394</b>	<b>\$408</b>	<b>\$422</b>
<b>INDUCED IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$0	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$423	\$0	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15
Hotel Bed Taxes	8,468	0	292	292	292	292	292	292	292	292	292	292	292	292
<b>Total Fiscal Revenue</b>	<b>8,891</b>	<b>\$0</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$0	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$106	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4
<b>Total Fiscal Revenue</b>	<b>\$106</b>	<b>\$0</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>
<b>INDIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$2,624	\$11,780	\$12,123	\$12,467	\$11,262	\$11,607	\$11,722	\$11,749	\$11,776	\$11,804	\$11,833	\$11,817	\$11,802
Jobs		29	129	132	136	123	127	128	128	128	129	129	129	129
Fiscal Revenues														
Indirect Taxes	\$1,748	\$0	\$59	\$61	\$62	\$56	\$58	\$59	\$59	\$59	\$59	\$59	\$59	\$59
<b>L.A. COUNTY</b>														
Economic Activity		\$6,560	\$29,449	\$30,307	\$31,167	\$28,156	\$29,019	\$29,306	\$29,373	\$29,441	\$29,511	\$29,581	\$29,542	\$29,504
Jobs		72	321	331	340	307	317	320	320	321	322	323	322	322
Fiscal Revenues														
Indirect Taxes	\$2,185	\$0	\$74	\$76	\$78	\$70	\$73	\$73	\$73	\$74	\$74	\$74	\$74	\$74

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
DIRECT IMPACTS														
-----														
LONG BEACH														
Economic Activity		\$49,197	\$49,133	\$50,236	\$51,882	\$51,823	\$51,766	\$51,710	\$51,656	\$51,604	\$51,553	\$51,504	\$51,456	\$51,409
Jobs		603	603	603	636	636	636	636	636	636	636	636	636	636
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	6,579	216	216	216	245	245	245	245	245	245	245	245	245	245
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	144	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	293	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Fiscal Revenue	18,206	\$591	\$599	\$609	\$647	\$657	\$667	\$678	\$689	\$701	\$713	\$725	\$738	\$752
L.A. COUNTY														
Economic Activity		\$49,197	\$49,133	\$50,236	\$51,882	\$51,823	\$51,766	\$51,710	\$51,656	\$51,604	\$51,553	\$51,504	\$51,456	\$51,409
Jobs		603	603	603	636	636	636	636	636	636	636	636	636	636
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	1,645	54	54	54	61	61	61	61	61	61	61	61	61	61
Total Fiscal Revenue	14,065	\$437	\$452	\$468	\$492	\$509	\$527	\$545	\$565	\$585	\$606	\$628	\$650	\$674
INDUCED IMPACTS														
-----														
LONG BEACH														
Economic Activity		\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$423	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15
Hotel Bed Taxes	8,468	292	292	292	292	292	292	292	292	292	292	292	292	292
Total Fiscal Revenue	8,891	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307
L.A. COUNTY														
Economic Activity		\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$106	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4
Total Fiscal Revenue	\$106	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4
INDIRECT IMPACTS														
-----														
LONG BEACH														
Economic Activity		\$11,787	\$11,773	\$12,016	\$12,378	\$12,365	\$12,352	\$12,340	\$12,328	\$12,316	\$12,305	\$12,294	\$12,284	\$12,274
Jobs		129	128	131	135	135	135	135	134	134	134	134	134	134
Fiscal Revenues														
Indirect Taxes	\$1,748	\$59	\$59	\$60	\$62	\$62	\$62	\$62	\$62	\$62	\$62	\$61	\$61	\$61
L.A. COUNTY														
Economic Activity		\$29,468	\$29,432	\$30,039	\$30,944	\$30,912	\$30,880	\$30,850	\$30,820	\$30,791	\$30,763	\$30,736	\$30,710	\$30,684
Jobs		321	321	328	338	337	337	337	336	336	336	335	335	335
Fiscal Revenues														
Indirect Taxes	\$2,185	\$74	\$74	\$75	\$77	\$77	\$77	\$77	\$77	\$77	\$77	\$77	\$77	\$77

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>TOTAL IMPACTS</b> -----														
<b>LONG BEACH</b> -----														
Economic Activity		\$14,550	\$65,324	\$67,227	\$69,134	\$62,455	\$64,369	\$65,006	\$65,155	\$65,306	\$65,460	\$65,617	\$65,530	\$65,446
Jobs		29	846	849	853	840	844	845	845	846	846	846	846	846
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	7,003	0	206	211	215	219	224	227	228	229	230	231	231	231
Hotel Bed Taxes	8,468	0	292	292	292	292	292	292	292	292	292	292	292	292
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	0	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	293	0	10	10	10	10	10	10	10	10	10	10	10	10
Indirect Taxes	1,748	0	59	61	62	56	58	59	59	59	59	59	59	59
<b>Total Fiscal Revenue</b>	<b>\$28,845</b>	<b>\$0</b>	<b>\$711</b>	<b>\$861</b>	<b>\$872</b>	<b>\$877</b>	<b>\$889</b>	<b>\$899</b>	<b>\$907</b>	<b>\$915</b>	<b>\$923</b>	<b>\$932</b>	<b>\$940</b>	<b>\$948</b>
<b>L.A. COUNTY</b> -----														
Economic Activity		\$18,486	\$82,993	\$85,411	\$87,834	\$79,349	\$81,780	\$82,590	\$82,778	\$82,971	\$83,166	\$83,366	\$83,255	\$83,149
Jobs		72	1,038	1,048	1,057	1,024	1,034	1,037	1,038	1,038	1,039	1,040	1,039	1,039
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	1,751	0	52	53	54	55	56	57	57	57	57	58	58	58
Indirect Taxes	2,185	0	74	76	78	70	73	73	73	74	74	74	74	74
<b>Total Fiscal Revenue</b>	<b>\$16,355</b>	<b>\$0</b>	<b>\$125</b>	<b>\$377</b>	<b>\$390</b>	<b>\$394</b>	<b>\$408</b>	<b>\$421</b>	<b>\$433</b>	<b>\$445</b>	<b>\$458</b>	<b>\$472</b>	<b>\$485</b>	<b>\$499</b>



	30 YEAR TOTAL	(000'S) 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>TOTAL IMPACTS</b> -----														
<b>LONG BEACH</b> -----														
Economic Activity		\$65,364	\$65,285	\$66,632	\$68,640	\$68,568	\$68,498	\$68,430	\$68,364	\$68,300	\$68,238	\$68,178	\$68,120	\$68,063
Jobs		846	846	848	886	885	885	885	885	885	885	885	885	884
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	7,003	231	231	231	259	259	259	259	259	259	259	259	259	259
Hotel Bed Taxes	8,468	292	292	292	292	292	292	292	292	292	292	292	292	292
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	144	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	293	10	10	10	10	10	10	10	10	10	10	10	10	10
Indirect Taxes	1,748	59	59	60	62	62	62	62	62	62	62	61	61	61
<b>Total Fiscal Revenue</b>	<b>\$28,845</b>	<b>\$956</b>	<b>\$965</b>	<b>\$975</b>	<b>\$1,016</b>	<b>\$1,025</b>	<b>\$1,036</b>	<b>\$1,046</b>	<b>\$1,057</b>	<b>\$1,069</b>	<b>\$1,081</b>	<b>\$1,093</b>	<b>\$1,106</b>	<b>\$1,120</b>
<b>L.A. COUNTY</b> -----														
Economic Activity		\$83,045	\$82,944	\$84,655	\$87,207	\$87,115	\$87,026	\$86,940	\$86,856	\$86,775	\$86,696	\$86,620	\$86,545	\$86,474
Jobs		1,039	1,038	1,045	1,088	1,088	1,087	1,087	1,087	1,087	1,086	1,086	1,086	1,085
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	1,751	58	58	58	65	65	65	65	65	65	65	65	65	65
Indirect Taxes	2,185	74	74	75	77	77	77	77	77	77	77	77	77	77
<b>Total Fiscal Revenue</b>	<b>\$16,355</b>	<b>\$514</b>	<b>\$529</b>	<b>\$547</b>	<b>\$573</b>	<b>\$590</b>	<b>\$608</b>	<b>\$626</b>	<b>\$645</b>	<b>\$665</b>	<b>\$686</b>	<b>\$708</b>	<b>\$731</b>	<b>\$754</b>

	30 YEAR TOTAL	(000'S)													
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
PRE-FINANCING CASH FLOW (\$000)															
Revenue															
Admissions - Ent. Center	266,716	9,432	9,432	9,432	9,432	9,432	9,432	9,432	9,432	9,432	9,432	9,432	9,432	9,432	
Admissions - Museum & Tours	60,917	2,162	2,097	2,034	1,973	1,914	1,856	1,801	1,747	1,694	1,643	1,594	1,546	1,500	
Food & Beverage	246,865	8,730	8,730	8,730	8,730	8,730	8,730	8,730	8,730	8,730	8,730	8,730	8,730	8,730	
Merchandise	123,571	2,874	2,874	2,874	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	5,748	
Dinner Theater	174,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	
Card Club Revenue	567,500	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	
(-) Cost of Goods Sold	(153,531)	(4,964)	(4,964)	(4,964)	(5,775)	(5,775)	(5,775)	(5,775)	(5,775)	(5,775)	(5,775)	(5,775)	(5,775)	(5,775)	
Net Revenues	1,286,039	44,233	44,168	44,105	46,108	46,049	45,991	45,935	45,881	45,829	45,778	45,729	45,681	45,635	
Operating Expenses															
Property Taxes	15,746	527	525	524	575	574	573	572	571	570	569	568	567	566	
Wages & Salaries	313,274	10,476	10,453	10,430	11,439	11,418	11,398	11,378	11,358	11,339	11,321	11,303	11,286	11,270	
Advertising & Promotion	54,482	1,822	1,818	1,814	1,989	1,986	1,982	1,979	1,975	1,972	1,969	1,966	1,963	1,960	
Maintenance & Repair	149,827	5,010	4,999	4,988	5,471	5,461	5,451	5,441	5,432	5,423	5,414	5,406	5,398	5,390	
Operating Supplies	20,431	683	682	680	746	745	743	742	741	740	738	737	736	735	
Contract Entertainment	27,241	911	909	907	995	993	991	989	988	986	984	983	981	980	
General & Administrative	38,736	1,295	1,292	1,290	1,414	1,412	1,409	1,407	1,404	1,402	1,400	1,398	1,396	1,393	
Card Club Operating Expenses	397,250	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000	
Utilities	55,158	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	
Total Operating Expenses	1,072,146	36,626	36,580	36,536	38,532	38,490	38,449	38,410	38,371	38,334	38,298	38,263	38,229	38,196	
Net Operating Income	213,892	7,607	7,588	7,570	7,576	7,558	7,542	7,526	7,510	7,495	7,480	7,466	7,452	7,438	
Other Expenses															
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ground Lease Payments	68,215	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	
Adjusted Net Operating Income	145,677	5,255	5,236	5,218	5,223	5,206	5,190	5,173	5,158	5,142	5,128	5,113	5,100	5,086	
Capital Costs															
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	
Leasehold Improvements	6,106	0	0	1,166	0	0	0	0	0	0	0	0	0	0	
Deferred Maintenance	27,106	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Capital Costs	34,212	0	0	1,166	0	0	0	0	0	0	0	0	0	0	
Pre-Financing Cash Flow	111,465	5,255	5,236	4,051	5,223	5,206	5,190	5,173	5,158	5,142	5,128	5,113	5,100	5,086	
Cumulative Cash Flow		30,441	35,677	39,728	44,952	50,158	55,347	60,521	65,678	70,821	75,949	81,062	86,162	91,248	
ECONOMIC RETURNS & INDICES															
Free & Clear Cash (NOI/Cost)		23.02%	22.96%	22.13%	22.14%	22.09%	22.04%	22.00%	21.95%	21.91%	21.86%	21.82%	21.78%	21.74%	
Adjusted NOI/Cost		15.90%	15.84%	15.25%	15.27%	15.22%	15.17%	15.12%	15.08%	15.03%	14.99%	14.95%	14.91%	14.87%	
Internal Rate of Return	16.45%														
Net Present Value @ 18.0%	(\$1,777)														
Net Present Value @ 20.0%	(\$3,579)														

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>PRE-FINANCING CASH FLOW (\$000)</b>														
Revenue														
Admissions - Ent. Center	266,716	0	7,860	8,070	8,279	8,489	8,698	9,013	9,118	9,222	9,327	9,432	9,432	9,432
Admissions - Museum & Tours	60,917	0	3,116	3,022	2,931	2,843	2,758	2,675	2,595	2,517	2,442	2,368	2,297	2,229
Food & Beverage	246,865	0	7,275	7,469	7,663	7,857	8,051	8,342	8,439	8,536	8,633	8,730	8,730	8,730
Merchandise	123,571	0	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874	2,874
Dinner Theater	174,000	0	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Card Club Revenue	567,500	0	15,000	16,250	17,500	18,750	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
(-) Cost of Goods Sold	(153,531)	0	(4,554)	(4,609)	(4,663)	(4,718)	(4,773)	(4,855)	(4,882)	(4,910)	(4,937)	(4,964)	(4,964)	(4,964)
Net Revenues	1,286,039	0	37,570	39,076	40,584	42,095	43,609	44,049	44,143	44,240	44,339	44,440	44,369	44,300
Operating Expenses														
Property Taxes	15,746	0	502	501	500	506	512	521	523	526	528	530	529	528
Wages & Salaries	313,274	0	9,982	9,970	9,956	10,069	10,183	10,371	10,414	10,459	10,504	10,550	10,525	10,500
Advertising & Promotion	54,482	0	1,736	1,734	1,731	1,751	1,771	1,804	1,811	1,819	1,827	1,835	1,830	1,826
Maintenance & Repair	149,827	0	4,774	4,768	4,761	4,816	4,870	4,960	4,981	5,002	5,024	5,046	5,034	5,022
Operating Supplies	20,431	0	651	650	649	657	664	676	679	682	685	688	686	685
Contract Entertainment	27,241	0	868	867	866	876	885	902	906	909	913	917	915	913
General & Administrative	38,736	0	1,234	1,233	1,231	1,245	1,259	1,282	1,288	1,293	1,299	1,305	1,301	1,298
Card Club Operating Expenses	397,250	0	10,500	11,375	12,250	13,125	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000
Utilities	55,158	0	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902
Total Operating Expenses	1,072,146	0	32,148	33,000	33,847	34,946	36,047	36,418	36,504	36,592	36,682	36,773	36,723	36,674
Net Operating Income	213,892	0	5,422	6,076	6,737	7,149	7,561	7,631	7,639	7,648	7,657	7,667	7,646	7,626
Other Expenses														
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Lease Payments	68,215	0	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
Adjusted Net Operating Income	145,677	0	3,070	3,724	4,385	4,797	5,209	5,279	5,287	5,295	5,305	5,315	5,294	5,274
Capital Costs														
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0
Leasehold Improvements	6,106	4,939	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	5,987	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0
Total Capital Costs	34,212	11,926	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0
Pre-Financing Cash Flow	111,465	(11,926)	(3,970)	(3,316)	(2,655)	4,797	5,209	5,279	5,287	5,295	5,305	5,315	5,294	5,274
Cumulative Cash Flow		(11,926)	(15,897)	(19,212)	(21,867)	(17,071)	(11,862)	(6,583)	(1,296)	3,999	9,304	14,619	19,913	25,187
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Free & Clear Cash (NOI/Cost)		0.00%	28.59%	23.36%	20.39%	21.63%	22.88%	23.09%	23.12%	23.14%	23.17%	23.20%	23.14%	23.08%
Adjusted NOI/Cost		0.00%	16.18%	14.32%	13.27%	14.52%	15.76%	15.97%	16.00%	16.02%	16.05%	16.08%	16.02%	15.96%
Internal Rate of Return	16.45%													
Net Present Value @ 18.0%	(\$1,777)													
Net Present Value @ 20.0%	(\$3,579)													

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>LEVERAGED CASH FLOW (\$000)</b>														
Recap:														
Annual Pre-Financing Cash Flow		(11,926)	(3,970)	(3,316)	(2,655)	4,797	5,209	5,279	5,287	5,295	5,305	5,315	5,294	5,274
Development Financing														
(+) Draws	23,132	8,348	4,928	4,928	4,928	0	0	0	0	0	0	0	0	0
(-) Interest Payments	(21,024)		(1,328)	(1,763)	(2,160)	(2,072)	(1,975)	(1,869)	(1,751)	(1,622)	(1,481)	(1,325)	(1,153)	(964)
(-) Principal Repayment	(22,651)		(418)	(630)	(881)	(969)	(1,066)	(1,173)	(1,290)	(1,419)	(1,561)	(1,717)	(1,888)	(2,077)
Net Dev. Financing (Repayment)	(20,543)	8,348	3,182	2,534	1,887	(3,041)	(3,041)	(3,041)	(3,041)	(3,041)	(3,041)	(3,041)	(3,041)	(3,041)
Net Operating Cash Flow (Equity)	90,922	(3,578)	(788)	(781)	(768)	1,755	2,168	2,238	2,246	2,254	2,263	2,273	2,253	2,233
Cumulative Cash Flow		(3,578)	(4,366)	(5,147)	(5,916)	(4,160)	(1,992)	245	2,491	4,745	7,008	9,282	11,535	13,767
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Debt Service Coverage		n.m	1.76	1.56	1.44	1.58	1.71	1.74	1.74	1.74	1.74	1.75	1.74	1.73
Cumulative Equity Investment		3,578	5,690	7,802	9,914	9,914	9,914	9,914	9,914	9,914	9,914	9,914	9,914	9,914
Return on Equity (NOCF/Equity)			-13.85%	-10.02%	-7.75%	17.71%	21.87%	22.57%	22.65%	22.74%	22.83%	22.93%	22.72%	22.52%
Internal Rate of Return	23.84%													
Net Present Value @ 25.0%	(\$314)													
Net Present Value @ 30.0%	(\$1,248)													

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>LEVERAGED CASH FLOW (\$000)</b>														
Recap:														
Annual Pre-Financing Cash Flow		5,255	5,236	4,051	5,223	5,206	5,190	5,173	5,158	5,142	5,128	5,113	5,100	5,086
Development Financing														
(+/-) Draws	23,132	0	0	0	0	0	0	0	0	0	0	0	0	0
(-) Interest Payments	(21,024)	(756)	(528)	(276)	0	0	0	0	0	0	0	0	0	0
(-) Principal Repayment	(22,651)	(2,285)	(2,513)	(2,765)	0	0	0	0	0	0	0	0	0	0
Net Dev. Financing (Repayment)	(20,543)	(3,041)	(3,041)	(3,041)	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow (Equity)	90,922	2,213	2,195	1,010	5,223	5,206	5,190	5,173	5,158	5,142	5,128	5,113	5,100	5,086
Cumulative Cash Flow		15,981	18,175	19,185	24,409	29,615	34,804	39,978	45,135	50,278	55,406	60,519	65,619	70,705
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Debt Service Coverage		1.73	1.72	1.72	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m
Cumulative Equity Investment		9,914	9,914	11,080	11,080	11,080	11,080	11,080	11,080	11,080	11,080	11,080	11,080	11,080
Return on Equity (NOCF/Equity)		22.33%	22.14%	9.11%	47.14%	46.99%	46.84%	46.69%	46.55%	46.41%	46.28%	46.15%	46.02%	45.90%
Internal Rate of Return	23.84%													
Net Present Value @ 25.0%	(\$314)													
Net Present Value @ 30.0%	(\$1,248)													

**QUEEN MARY**

**OPTION 2 - ENTERTAINMENT CENTER & CARD CLUB**

**4% INFLATION SCENARIO**

**30 YEAR LEASE**

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- THE INFORMATION IN THIS REPORT IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY. •
- THIS IS NOT A PROJECTION OF EXPECTED RESULTS. THE ATTACHED ASSUMPTIONS •
- STATEMENT BY KRM IS AN INTEGRAL PART OF THIS ANALYSIS •

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INVESTMENT ASSUMPTIONS -----			1992\$ Budget	Start Year	End Year	Number of employees	Resale Cycle
Pre-Development Costs							
Planning & Predevelopment			1,000,000	1992	1992		0 yrs
Infrastructure			0	1992	1992		0 yrs
Area Development			0	1992	1992		0 yrs
Parking Structure	# Spaces	Dev. Cost \$/Space					
Phase 1	0	\$0	0	1992	1992		0 yrs
Phase 2	0	\$0	0	1992	1992		0 yrs
Phase 3	0	\$0	0	1992	1992		0 yrs
Entertainment Center Development	Sq.Ft.	\$/Sq.Ft.					
Observ. Lounge - Music Club	4,600	\$111	511,000	1992	1992		0 yrs
Queen's Salon - Dinner Theater	6,400	\$75	482,000	1992	1992		0 yrs
Royal Salon & King's View - Sport Bar	4,000	\$130	520,000	1992	1992		0 yrs
Wedding Chapel & Vict. Room - Magic Club	3,300	\$115	381,000	1992	1992		0 yrs
Chelsea Cafe - Restaurant	2,000	\$150	300,000	1992	1992		0 yrs
Brittania Salon - Comedy Club	0	\$0	0	1992	1992		0 yrs
Veranda Grill - Music/Dance Club	4,000	\$101	402,500	1992	1992		0 yrs
Promenade Cafe Lounge - Rest.	4,100	\$147	603,850	1992	1992		0 yrs
Sir Winston Room - Restaurant	3,500	\$87	305,000	1992	1992		0 yrs
Card Club							
Brittania Salon - Card Club	9,000	\$121	1,090,000	1992	1992		0 yrs
Other Improved Areas							
Visitor Support Area - Misc.	13,000	\$4	54,000	1992	1992		0 yrs
Rehabilitation of Entertainment Center			876,338	2007	2007		0 yrs
Deferred Maintenance							
Phase 1			5,987,045	1992	1992		0 yrs
Phase 2			21,119,175	1993	1995		0 yrs
Museum & Tour Development	Sq.Ft.	\$/Sq.Ft.					
Phase 1	15,000	\$13	200,000	1992	1992		0 yrs
Rehabilitation of Museum & Tour	15,000	\$13	200,000	2007	2007		0 yrs
Phase 3	0	\$0	0	1992	1992		0 yrs
Retail Development	Sq.Ft.	\$/Sq. Ft.					
Phase 1	11,000	\$8	90,000	1992	1992		0 yrs
Rehabilitation of Retail	11,000	\$8	90,000	2007	2007		0 yrs
Phase 3	0	\$0	0	1992	1992		0 yrs

## OPERATING ASSUMPTIONS

-----  
Utility ExpensesAnnual  
Cost

Telephone	\$92,000
Water	\$180,000
Gas	\$180,000
Electric	\$1,450,000

## Other Expenses

Property Taxes	500,000
Wages & Salaries	9,970,000
Advertising & Promotion	1,730,000
Maintenance & Repairs	4,853,000
Operating Supplies	650,000
Contract Entertainment	870,000
General & Administrative	1,230,000
Card Club Operating Expenses	10,500,000

Cost of Goods Sold Factor 28.2%

## GROUND LEASE ASSUMPTIONS

-----  
Percentage Rents (Gross Revenue)

Minimum Rent	
Land Value/Foot	\$12.00
Land Area (Acres)	45
Lease Constant	10.0%

Entertainment Center/Retail	Card Club	Museum & Tour	Food & Beverage
5.0%	5.0%	5.0%	3.0%

## REVENUES

-----  
Entertainment Center

Sales/Person

Dinner Theater	
Admissions/Meals & Alcohol	\$30.00
Museum & Tour	
Admissions	\$4.65
Other Clubs & Bars	
Admissions	\$10.48
Meals & Alcohol	\$9.70

## Card Club Revenues

Percent  
Breakdown

Fees & Rake	80.00%*** Gaming Tax Rate Applicable
Food & Beverage	20.00%
Number of Card Tables	50

## Other Revenue Sources

Sales/S.F

Retail Spending Per Square Foot	\$261.25
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Hotel Rooms Available	0
Daily Rate Per Room	\$0
Occupancy Rate	0.0%
Annual Hotel Revenues	\$0



## INDUCED ASSUMPTIONS

## QUEEN MARY CENTER Employee &amp; Visitor Impacts to Long Beach

	Supported Rooms	Daily Rate	Annual Revenues	Additional Employees
Hotels	100	\$80	\$2,920,000	100
Retail Spending			\$1,460,000	15

## NON-FINANCIAL ASSUMPTIONS

# of Employees			
Entertainment Center/Restaurants	5/1000 sf		160
Museum & Tour	3/1000 sf		45
Card Club	4/table		200
Food/Beverage Carts			10
Retail	2/1000 sf		22
Ship Maintenance			50
Average Salary - Indirects			\$27,500
Inflation Rate			4.0%
City NPV Discount Rate			9.0%
Land Value Increase for Tax Assessment			4.00%
NPV Discount Rate for Unleveraged Cash Flow		18.0% &	20.0%
NPV Discount Rate for Leveraged Cash Flow		25.0% &	30.0%

## LOAN ASSUMPTIONS

Percentage of Capital Costs Funded	70.0%
Loan Interest Rate	10.0%

## TAX RATE ASSUMPTIONS

Long Beach Property Tax Portion	City 27.5%
County Property Tax Portion	47.8%
Hotel Bed Tax Rate	10.00%
Telephone - Utility Tax Rate	5.0%
Water - Utility Tax Rate	5.0%
Gas - Utility Tax Rate	5.0%
Electric - Utility Tax Rate	8.4%
Long Beach Gaming Tax Rate	0.0%
L.A. County Sales Tax Rate	0.25%
Long Beach Sales Tax Rate	1.00%
Long Beach Miscellaneous Taxes:	
Business License Fee	\$5,000
Business License Tax Per Employee	\$8.26 /per Employee

## INDIRECT IMPACT ASSUMPTIONS

Percentage Impact from Direct Spending	110.00%
Long Beach Economic Activity Impact Factor	20.00%
L.A. County Economic Activity Impact Factor	50.00%
Long Beach Indirect Tax Portion of Economic Activity	0.50%
L.A. County Indirect Tax Portion of Economic Activity	0.25%

		(000's)													
		30 YEAR TOTAL	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Capital Spending															
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,505	3,505	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	1,090	1,090	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	1,572	54	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	5,987	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0	0
Museum & Tour Development	546	200	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail Development	246	90	0	0	0	0	0	0	0	0	0	0	0	0	0
Queen Mary Operational Spending															
Retail Spending	246,881	0	2,874	2,989	3,108	3,233	3,362	3,496	3,636	3,782	3,933	4,090	4,254	4,424	4,424
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Induced Economic Activity															
Retail Spending	77,331	0	1,460	1,518	1,579	1,642	1,708	1,776	1,847	1,921	1,998	2,078	2,161	2,248	2,248
Hotel Spending	154,662	0	2,920	3,037	3,158	3,285	3,416	3,553	3,695	3,843	3,996	4,156	4,322	4,495	4,495
Direct Economic Activity															
Capital Improvements		11,926	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	572,067	0	10,976	11,092	11,659	12,257	12,887	13,674	14,250	14,854	15,487	16,150	16,695	17,260	17,260
Food & Beverage Sales	982,531	0	16,275	17,388	18,564	19,805	21,117	22,316	23,331	24,392	25,501	26,659	27,725	28,834	28,834
Card Club Fees & Rake	837,053	0	12,000	13,520	15,142	16,873	18,718	19,466	20,245	21,055	21,897	22,773	23,684	24,631	24,631
Merchandise Sales	246,881	0	2,874	2,989	3,108	3,233	3,362	3,496	3,636	3,782	3,933	4,090	4,254	4,424	4,424
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilization Factors															
Entertainment Center Attendance		0	750,000	770,000	790,000	810,000	830,000	860,000	870,000	880,000	890,000	900,000	900,000	900,000	900,000
Dinner Theater Attendance		0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		0	670,000	649,900	630,403	611,491	593,146	575,352	558,091	541,349	525,108	509,355	494,074	479,252	479,252
Card Club Revenue/Table		\$0	\$300,000	\$325,000	\$350,000	\$375,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		0%	80%	79%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

		(000'S)												
	30 YEAR TOTAL	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Capital Spending</b>														
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,505	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	1,090	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	1,572	0	0	1,518	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	0	0	0	0	0	0	0	0	0	0	0	0	0
Museum & Tour Development	546	0	0	346	0	0	0	0	0	0	0	0	0	0
Retail Development	246	0	0	156	0	0	0	0	0	0	0	0	0	0
<b>Queen Mary Operational Spending</b>														
Retail Spending	246,881	4,601	4,785	4,976	10,351	10,765	11,196	11,643	12,109	12,593	13,097	13,621	14,166	14,733
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Induced Economic Activity</b>														
Retail Spending	77,331	2,338	2,431	2,528	2,629	2,735	2,844	2,958	3,076	3,199	3,327	3,460	3,598	3,742
Hotel Spending	154,662	4,675	4,862	5,056	5,259	5,469	5,688	5,915	6,152	6,398	6,654	6,920	7,197	7,485
<b>Direct Economic Activity</b>														
Capital Improvements	0	0	0	2,020	0	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	572,067	17,848	18,458	19,092	19,750	20,433	21,143	21,880	22,646	23,441	24,267	25,126	26,018	26,944
Food & Beverage Sales	982,531	29,987	31,187	32,434	33,732	35,081	36,484	37,944	39,461	41,040	42,681	44,389	46,164	48,011
Card Club Fees & Rake	837,053	25,617	26,641	27,707	28,815	29,968	31,166	32,413	33,710	35,058	36,460	37,919	39,435	41,013
Merchandise Sales	246,881	4,601	4,785	4,976	10,351	10,765	11,196	11,643	12,109	12,593	13,097	13,621	14,166	14,733
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Utilization Factors</b>														
Entertainment Center Attendance		900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
Dinner Theater Attendance		200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		464,874	450,928	437,400	424,278	411,550	399,203	387,227	375,611	364,342	353,412	342,810	332,525	322,550
Card Club Revenue/Table		\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>DIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$11,926	\$49,164	\$52,309	\$56,392	\$52,168	\$56,084	\$58,952	\$61,463	\$64,083	\$66,818	\$69,672	\$72,357	\$75,150
Jobs		0	603	603	603	603	603	603	603	603	603	603	603	603
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	12,294	0	191	204	217	230	245	258	270	282	294	307	320	333
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	0	144	150	156	162	169	176	183	190	198	206	214	222
Business License Fees	538	0	10	10	11	11	12	12	13	13	14	14	15	15
Total Fiscal Revenue	27,625	\$0	\$346	\$507	\$532	\$559	\$586	\$613	\$639	\$666	\$694	\$723	\$752	\$782
<b>L.A. COUNTY</b>														
Economic Activity		\$11,926	\$49,164	\$52,309	\$56,392	\$52,168	\$56,084	\$58,952	\$61,463	\$64,083	\$66,818	\$69,672	\$72,357	\$75,150
Jobs		0	603	603	603	603	603	603	603	603	603	603	603	603
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	3,074	0	48	51	54	58	61	65	67	70	74	77	80	83
Total Fiscal Revenue	15,493	\$0	\$48	\$300	\$313	\$326	\$341	\$355	\$370	\$385	\$401	\$417	\$434	\$451
<b>INDUCED IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$0	\$4,380	\$4,555	\$4,737	\$4,927	\$5,124	\$5,329	\$5,542	\$5,764	\$5,994	\$6,234	\$6,483	\$6,743
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$773	\$0	\$15	\$15	\$16	\$16	\$17	\$18	\$18	\$19	\$20	\$21	\$22	\$22
Hotel Bed Taxes	15,466	0	292	304	316	328	342	355	369	384	400	416	432	450
Total Fiscal Revenue	16,239	\$0	\$307	\$319	\$332	\$345	\$359	\$373	\$388	\$403	\$420	\$436	\$454	\$472
<b>L.A. COUNTY</b>														
Economic Activity		\$0	\$4,380	\$4,555	\$4,737	\$4,927	\$5,124	\$5,329	\$5,542	\$5,764	\$5,994	\$6,234	\$6,483	\$6,743
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$193	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$5	\$5	\$5	\$5	\$5	\$6
Total Fiscal Revenue	\$193	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$5	\$5	\$5	\$5	\$5	\$6
<b>INDIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$2,624	\$11,780	\$12,510	\$13,448	\$12,561	\$13,466	\$14,142	\$14,741	\$15,366	\$16,019	\$16,699	\$17,345	\$18,016
Jobs		29	129	136	147	137	147	154	161	168	175	182	189	197
Fiscal Revenues														
Indirect Taxes	\$3,184	\$0	\$59	\$63	\$67	\$63	\$67	\$71	\$74	\$77	\$80	\$83	\$87	\$90
<b>L.A. COUNTY</b>														
Economic Activity		\$6,560	\$29,449	\$31,276	\$33,621	\$31,402	\$33,664	\$35,355	\$36,853	\$38,416	\$40,047	\$41,748	\$43,362	\$45,041
Jobs		72	321	341	367	343	367	386	402	419	437	455	473	491
Fiscal Revenues														
Indirect Taxes	\$3,980	\$0	\$74	\$78	\$84	\$79	\$84	\$88	\$92	\$96	\$100	\$104	\$108	\$113

	30 YEAR TOTAL	2005	(000'S) 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>DIRECT IMPACTS</b>														
-----														
<b>LONG BEACH</b>														
Economic Activity		\$78,053	\$81,071	\$86,229	\$92,647	\$96,247	\$99,989	\$103,880	\$107,926	\$112,132	\$116,506	\$121,054	\$125,783	\$130,700
Jobs		603	603	603	636	636	636	636	636	636	636	636	636	636
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	12,294	346	360	374	441	458	477	496	516	536	558	580	603	627
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	231	240	250	260	270	281	293	304	316	329	342	356	370
Business License Fees	538	16	17	17	18	19	20	21	22	22	23	24	25	26
<b>Total Fiscal Revenue</b>	<b>27,625</b>	<b>\$813</b>	<b>\$846</b>	<b>\$880</b>	<b>\$967</b>	<b>\$1,006</b>	<b>\$1,046</b>	<b>\$1,088</b>	<b>\$1,131</b>	<b>\$1,176</b>	<b>\$1,224</b>	<b>\$1,272</b>	<b>\$1,323</b>	<b>\$1,376</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$78,053	\$81,071	\$86,229	\$92,647	\$96,247	\$99,989	\$103,880	\$107,926	\$112,132	\$116,506	\$121,054	\$125,783	\$130,700
Jobs		603	603	603	636	636	636	636	636	636	636	636	636	636
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	3,074	86	90	94	110	115	119	124	129	134	139	145	151	157
<b>Total Fiscal Revenue</b>	<b>15,493</b>	<b>\$469</b>	<b>\$488</b>	<b>\$507</b>	<b>\$541</b>	<b>\$562</b>	<b>\$585</b>	<b>\$608</b>	<b>\$632</b>	<b>\$658</b>	<b>\$684</b>	<b>\$711</b>	<b>\$740</b>	<b>\$769</b>
<b>INDUCED IMPACTS</b>														
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<b>LONG BEACH</b>														
Economic Activity		\$7,013	\$7,293	\$7,585	\$7,888	\$8,204	\$8,532	\$8,873	\$9,228	\$9,597	\$9,981	\$10,380	\$10,795	\$11,227
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$773	\$23	\$24	\$25	\$26	\$27	\$28	\$30	\$31	\$32	\$33	\$35	\$36	\$37
Hotel Bed Taxes	15,466	468	486	506	526	547	569	592	615	640	665	692	720	748
<b>Total Fiscal Revenue</b>	<b>16,239</b>	<b>\$491</b>	<b>\$511</b>	<b>\$531</b>	<b>\$552</b>	<b>\$574</b>	<b>\$597</b>	<b>\$621</b>	<b>\$646</b>	<b>\$672</b>	<b>\$699</b>	<b>\$727</b>	<b>\$756</b>	<b>\$786</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$7,013	\$7,293	\$7,585	\$7,888	\$8,204	\$8,532	\$8,873	\$9,228	\$9,597	\$9,981	\$10,380	\$10,795	\$11,227
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$193	\$6	\$6	\$6	\$7	\$7	\$7	\$7	\$8	\$8	\$8	\$9	\$9	\$9
<b>Total Fiscal Revenue</b>	<b>\$193</b>	<b>\$6</b>	<b>\$6</b>	<b>\$6</b>	<b>\$7</b>	<b>\$7</b>	<b>\$7</b>	<b>\$7</b>	<b>\$8</b>	<b>\$8</b>	<b>\$8</b>	<b>\$9</b>	<b>\$9</b>	<b>\$9</b>
<b>INDIRECT IMPACTS</b>														
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<b>LONG BEACH</b>														
Economic Activity		\$18,714	\$19,440	\$20,639	\$22,118	\$22,979	\$23,875	\$24,806	\$25,774	\$26,780	\$27,827	\$28,916	\$30,047	\$31,224
Jobs		204	212	225	241	251	260	271	281	292	304	315	328	341
Fiscal Revenues														
Indirect Taxes	\$3,184	\$94	\$97	\$103	\$111	\$115	\$119	\$124	\$129	\$134	\$139	\$145	\$150	\$156
<b>L.A. COUNTY</b>														
Economic Activity		\$46,786	\$48,600	\$51,597	\$55,294	\$57,448	\$59,686	\$62,014	\$64,435	\$66,951	\$69,568	\$72,289	\$75,118	\$78,060
Jobs		510	530	563	603	627	651	677	703	730	759	789	819	852
Fiscal Revenues														
Indirect Taxes	\$3,980	\$117	\$122	\$129	\$138	\$144	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$195

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>TOTAL IMPACTS</b> -----														
<b>LONG BEACH</b> -----														
Economic Activity		\$14,550	\$65,324	\$69,375	\$74,578	\$69,656	\$74,673	\$78,423	\$81,746	\$85,213	\$88,831	\$92,605	\$96,186	\$99,909
Jobs		29	846	854	864	854	864	871	878	885	892	899	906	914
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	13,067	0	206	219	233	247	262	276	288	301	314	328	341	355
Hotel Bed Taxes	15,466	0	292	304	316	328	342	355	369	384	400	416	432	450
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	0	144	150	156	162	169	176	183	190	198	206	214	222
Business License Fees	538	0	10	10	11	11	12	12	13	13	14	14	15	15
Indirect Taxes	3,184	0	59	63	67	63	67	71	74	77	80	83	87	90
Total Fiscal Revenue	\$47,049	\$0	\$711	\$889	\$931	\$966	\$1,012	\$1,057	\$1,101	\$1,146	\$1,193	\$1,243	\$1,292	\$1,344
<b>L.A. COUNTY</b> -----														
Economic Activity		\$18,486	\$82,993	\$88,140	\$94,750	\$88,497	\$94,872	\$99,636	\$103,858	\$108,263	\$112,859	\$117,654	\$122,203	\$126,933
Jobs		72	1,038	1,058	1,084	1,060	1,084	1,103	1,119	1,136	1,154	1,173	1,190	1,208
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	3,267	0	52	55	58	62	65	69	72	75	79	82	85	89
Indirect Taxes	3,980	0	74	78	84	79	84	88	92	96	100	104	108	113
Total Fiscal Revenue	\$19,667	\$0	\$125	\$381	\$401	\$409	\$429	\$448	\$467	\$486	\$506	\$527	\$548	\$569

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOTAL IMPACTS -----														
LONG BEACH -----														
Economic Activity		\$103,780	\$107,804	\$114,453	\$122,653	\$127,429	\$132,395	\$137,559	\$142,928	\$148,510	\$154,315	\$160,350	\$166,626	\$173,151
Jobs		921	929	942	992	1,001	1,011	1,021	1,032	1,043	1,054	1,066	1,078	1,091
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	13,067	369	384	399	467	486	505	525	546	568	591	615	639	665
Hotel Bed Taxes	15,466	468	486	506	526	547	569	592	615	640	665	692	720	748
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	7,648	231	240	250	260	270	281	293	304	316	329	342	356	370
Business License Fees	538	16	17	17	18	19	20	21	22	22	23	24	25	26
Indirect Taxes	3,184	94	97	103	111	115	119	124	129	134	139	145	150	156
Total Fiscal Revenue	\$47,049	\$1,398	\$1,453	\$1,514	\$1,630	\$1,695	\$1,762	\$1,833	\$1,906	\$1,982	\$2,061	\$2,144	\$2,229	\$2,318
L.A. COUNTY -----														
Economic Activity		\$131,851	\$136,964	\$145,411	\$155,830	\$161,898	\$168,207	\$174,767	\$181,588	\$188,681	\$196,055	\$203,723	\$211,697	\$219,987
Jobs		1,227	1,247	1,280	1,354	1,377	1,402	1,427	1,454	1,481	1,510	1,539	1,570	1,602
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	3,267	92	96	100	117	121	126	131	137	142	148	154	160	166
Indirect Taxes	3,980	117	122	129	138	144	149	155	161	167	174	181	188	195
Total Fiscal Revenue	\$19,667	\$592	\$615	\$643	\$685	\$713	\$741	\$771	\$801	\$833	\$866	\$901	\$937	\$974

	30 YEAR TOTAL	(000'S)														
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
PRE-FINANCING CASH FLOW (\$000)																
Revenue																
Admissions - Ent. Center	492,096	15,101	15,705	16,333	16,986	17,666	18,373	19,108	19,872	20,667	21,493	22,353	23,247	24,177		
Admissions - Museum & Tours	102,415	3,461	3,491	3,522	3,553	3,584	3,616	3,648	3,680	3,712	3,745	3,778	3,811	3,845		
Food & Beverage	455,471	13,977	14,536	15,118	15,722	16,351	17,005	17,685	18,393	19,129	19,894	20,689	21,517	22,378		
Merchandise	246,881	4,601	4,785	4,976	10,351	10,765	11,196	11,643	12,109	12,593	13,097	13,621	14,166	14,733		
Dinner Theater	317,798	9,606	9,990	10,390	10,806	11,238	11,687	12,155	12,641	13,147	13,673	14,220	14,788	15,380		
Card Club Revenue	1,046,316	32,021	33,301	34,634	36,019	37,460	38,958	40,516	42,137	43,822	45,575	47,398	49,294	51,266		
(-) Cost of Goods Sold	(287,682)	(7,948)	(8,266)	(8,596)	(10,400)	(10,816)	(11,248)	(11,698)	(12,166)	(12,653)	(13,159)	(13,685)	(14,233)	(14,802)		
Net Revenues	2,373,294	70,819	73,543	76,376	83,037	86,248	89,586	93,057	96,665	100,417	104,318	108,374	112,591	116,976		
Operating Expenses																
Property Taxes	29,139	843	875	908	1,036	1,075	1,116	1,159	1,203	1,249	1,297	1,346	1,398	1,452		
Wages & Salaries	579,721	16,772	17,405	18,062	20,602	21,386	22,201	23,049	23,930	24,846	25,798	26,788	27,818	28,888		
Advertising & Promotion	100,821	2,917	3,027	3,141	3,583	3,719	3,861	4,009	4,162	4,321	4,487	4,659	4,838	5,024		
Maintenance & Repair	277,258	8,022	8,324	8,638	9,853	10,228	10,618	11,023	11,445	11,883	12,338	12,812	13,304	13,816		
Operating Supplies	37,808	1,094	1,135	1,178	1,344	1,395	1,448	1,503	1,561	1,620	1,682	1,747	1,814	1,884		
Contract Entertainment	50,411	1,458	1,513	1,571	1,791	1,860	1,931	2,004	2,081	2,161	2,243	2,329	2,419	2,512		
General & Administrative	71,682	2,074	2,152	2,233	2,547	2,644	2,745	2,850	2,959	3,072	3,190	3,312	3,440	3,572		
Card Club Operating Expenses	732,421	22,414	23,311	24,243	25,213	26,222	27,271	28,361	29,496	30,676	31,903	33,179	34,506	35,886		
Utilities	100,742	3,045	3,167	3,294	3,425	3,562	3,705	3,853	4,007	4,168	4,334	4,508	4,688	4,875		
Total Operating Expenses	1,980,002	58,640	60,909	63,268	69,394	72,091	74,896	77,811	80,843	83,995	87,273	90,681	94,224	97,909		
Net Operating Income	393,292	12,179	12,635	13,108	13,643	14,157	14,691	15,246	15,822	16,422	17,045	17,693	18,367	19,067		
Other Expenses																
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ground Lease Payments	118,688	3,467	3,600	3,738	4,141	4,301	4,468	4,641	4,821	5,008	5,203	5,405	5,615	5,834		
Adjusted Net Operating Income	274,604	8,712	9,035	9,370	9,502	9,855	10,223	10,605	11,001	11,414	11,843	12,288	12,751	13,233		
Capital Costs																
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0		
Leasehold Improvements	6,959	0	0	2,020	0	0	0	0	0	0	0	0	0	0		
Deferred Maintenance	28,267	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Capital Costs	36,226	0	0	2,020	0	0	0	0	0	0	0	0	0	0		
Pre-Financing Cash Flow	238,378	8,712	9,035	7,350	9,502	9,855	10,223	10,605	11,001	11,414	11,843	12,288	12,751	13,233		
Cumulative Cash Flow		51,139	60,174	67,524	77,026	86,882	97,104	107,709	118,710	130,124	141,967	154,255	167,007	180,240		
ECONOMIC RETURNS & INDICES																
Free & Clear Cash (NOI/Cost)		35.60%	36.94%	36.19%	37.66%	39.08%	40.55%	42.08%	43.68%	45.33%	47.05%	48.84%	50.70%	52.63%		
Adjusted NOI/Cost		25.47%	26.41%	25.87%	26.23%	27.21%	28.22%	29.27%	30.37%	31.51%	32.69%	33.92%	35.20%	36.53%		
Internal Rate of Return	21.26%															
Net Present Value @ 18.0%	\$4,719															
Net Present Value @ 20.0%	\$1,573															



	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>PRE-FINANCING CASH FLOW (\$000)</b>														
Revenue														
Admissions - Ent. Center	492,096	0	7,860	8,392	8,955	9,549	10,176	10,965	11,537	12,136	12,765	13,425	13,962	14,520
Admissions - Museum & Tours	102,415	0	3,116	3,143	3,171	3,198	3,227	3,255	3,284	3,313	3,342	3,371	3,401	3,431
Food & Beverage	455,471	0	7,275	7,768	8,288	8,838	9,419	10,149	10,678	11,233	11,815	12,426	12,923	13,439
Merchandise	246,881	0	2,874	2,989	3,108	3,233	3,362	3,496	3,636	3,782	3,933	4,090	4,254	4,424
Dinner Theater	317,798	0	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540	8,881	9,237
Card Club Revenue	1,046,316	0	15,000	16,900	18,928	21,091	23,397	24,333	25,306	26,319	27,371	28,466	29,605	30,789
(-) Cost of Goods Sold	(287,682)	0	(4,554)	(4,793)	(5,044)	(5,307)	(5,583)	(5,907)	(6,178)	(6,461)	(6,756)	(7,066)	(7,348)	(7,642)
Net Revenues	2,373,294	0	37,570	40,639	43,896	47,351	51,016	53,592	55,855	58,217	60,681	63,252	65,677	68,198
Operating Expenses														
Property Taxes	29,139	0	502	521	541	569	599	634	662	692	723	755	783	812
Wages & Salaries	579,721	0	9,982	10,368	10,768	11,326	11,913	12,618	13,177	13,763	14,376	15,016	15,579	16,164
Advertising & Promotion	100,821	0	1,736	1,803	1,873	1,970	2,072	2,194	2,292	2,394	2,500	2,612	2,709	2,811
Maintenance & Repair	277,258	0	4,774	4,959	5,150	5,417	5,697	6,034	6,302	6,582	6,875	7,182	7,451	7,731
Operating Supplies	37,808	0	651	676	702	739	777	823	859	898	938	979	1,016	1,054
Contract Entertainment	50,411	0	868	902	936	985	1,036	1,097	1,146	1,197	1,250	1,306	1,355	1,406
General & Administrative	71,682	0	1,234	1,282	1,331	1,400	1,473	1,560	1,629	1,702	1,778	1,857	1,926	1,999
Card Club Operating Expenses	732,421	0	10,500	11,830	13,250	14,764	16,378	17,033	17,714	18,423	19,160	19,926	20,723	21,552
Utilities	100,742	0	1,902	1,978	2,057	2,139	2,225	2,314	2,407	2,503	2,603	2,707	2,815	2,928
Total Operating Expenses	1,980,002	0	32,148	34,320	36,609	39,310	42,170	44,308	46,190	48,153	50,202	52,340	54,359	56,458
Net Operating Income	393,292	0	5,422	6,319	7,287	8,041	8,846	9,284	9,666	10,064	10,479	10,912	11,318	11,740
Other Expenses														
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Lease Payments	118,688	0	2,352	2,352	2,352	2,352	2,501	2,626	2,736	2,851	2,971	3,097	3,215	3,338
Adjusted Net Operating Income	274,604	0	3,070	3,967	4,934	5,689	6,345	6,658	6,930	7,212	7,508	7,816	8,103	8,402
Capital Costs														
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0
Leasehold Improvements	6,959	4,939	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	28,267	5,987	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0
Total Capital Costs	36,226	11,926	7,040	7,321	7,919	0	0	0	0	0	0	0	0	0
Pre-Financing Cash Flow	238,378	(11,926)	(3,970)	(3,354)	(2,984)	5,689	6,345	6,658	6,930	7,212	7,508	7,816	8,103	8,402
Cumulative Cash Flow		(11,926)	(15,897)	(19,251)	(22,235)	(16,546)	(10,201)	(3,543)	3,387	10,599	18,107	25,922	34,026	42,427
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Free & Clear Cash (NOI/Cost)		0.00%	28.59%	24.04%	21.30%	23.51%	25.86%	27.14%	28.26%	29.42%	30.63%	31.90%	33.09%	34.32%
Adjusted NOI/Cost		0.00%	16.18%	15.09%	14.43%	16.63%	18.55%	19.47%	20.26%	21.09%	21.95%	22.85%	23.69%	24.56%
Internal Rate of Return	21.26%													
Net Present Value @ 18.0%	\$4,719													
Net Present Value @ 20.0%	\$1,573													

	30 YEAR TOTAL	2005	(000'S) 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>LEVERAGED CASH FLOW (\$000)</b>														
<b>Recap:</b>														
Annual Pre-Financing Cash Flow		8,712	9,035	7,350	9,502	9,855	10,223	10,605	11,001	11,414	11,843	12,288	12,751	13,233
Development Financing														
(+) Draws	23,944	0	0	0	0	0	0	0	0	0	0	0	0	0
(-) Interest Payments	(21,673)	(783)	(546)	(286)	0	0	0	0	0	0	0	0	0	0
(-) Principal Repayment	(23,417)	(2,365)	(2,602)	(2,862)	0	0	0	0	0	0	0	0	0	0
Net Dev. Financing (Repayment)	(21,145)	(3,148)	(3,148)	(3,148)	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow (Equity)	217,233	5,564	5,887	4,202	9,502	9,855	10,223	10,605	11,001	11,414	11,843	12,288	12,751	13,233
Cumulative Cash Flow	-----	36,290	42,177	46,379	55,881	65,737	75,959	86,564	97,565	108,979	120,822	133,110	145,862	159,095
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Debt Service Coverage		2.77	2.87	2.98	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m
Cumulative Equity Investment		10,262	10,262	12,282	12,282	12,282	12,282	12,282	12,282	12,282	12,282	12,282	12,282	12,282
Return on Equity (NOCF/Equity)		54.22%	57.36%	34.21%	77.37%	80.25%	83.24%	86.35%	89.58%	92.94%	96.43%	100.05%	103.83%	107.75%
Internal Rate of Return	33.31%													
Net Present Value @ 25.0%	\$2,881													
Net Present Value @ 30.0%	\$836													

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>LEVERAGED CASH FLOW (\$000)</b>														
Recap:														
Annual Pre-Financing Cash Flow		(11,926)	(3,970)	(3,354)	(2,984)	5,689	6,345	6,658	6,930	7,212	7,508	7,816	8,103	8,402
Development Financing														
(+) Draws	23,944	8,348	4,928	5,125	5,543	0	0	0	0	0	0	0	0	0
(-) Interest Payments	(21,673)		(1,328)	(1,782)	(2,236)	(2,145)	(2,045)	(1,934)	(1,813)	(1,679)	(1,533)	(1,371)	(1,193)	(998)
(-) Principal Repayment	(23,417)		(418)	(637)	(912)	(1,003)	(1,103)	(1,214)	(1,335)	(1,469)	(1,615)	(1,777)	(1,955)	(2,150)
Net Dev. Financing (Repayment)	(21,145)	8,348	3,182	2,706	2,395	(3,148)	(3,148)	(3,148)	(3,148)	(3,148)	(3,148)	(3,148)	(3,148)	(3,148)
Net Operating Cash Flow (Equity)	217,233	(3,578)	(788)	(649)	(589)	2,541	3,197	3,510	3,781	4,064	4,360	4,668	4,955	5,254
Cumulative Cash Flow		(3,578)	(4,366)	(5,014)	(5,604)	(3,063)	134	3,644	7,426	11,490	15,850	20,518	25,473	30,726
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Debt Service Coverage		n.m	1.76	1.64	1.57	1.81	2.02	2.12	2.20	2.29	2.38	2.48	2.57	2.67
Cumulative Equity Investment		3,578	5,690	7,886	10,262	10,262	10,262	10,262	10,262	10,262	10,262	10,262	10,262	10,262
Return on Equity (NOCF/Equity)			-13.85%	-8.23%	-5.74%	24.76%	31.15%	34.21%	36.85%	39.61%	42.48%	45.49%	48.29%	51.20%
Internal Rate of Return	33.31%													
Net Present Value @ 25.0%	\$2,881													
Net Present Value @ 30.0%	\$836													

**QUEEN MARY**

**OPTION 1 - ENTERTAINMENT CENTER**

**NO INFLATION SCENARIO**

**30 YEAR LEASE**

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- THE INFORMATION IN THIS REPORT IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY. •
- THIS IS NOT A PROJECTION OF EXPECTED RESULTS. THE ATTACHED ASSUMPTIONS •
- STATEMENT BY KRM IS AN INTEGRAL PART OF THIS ANALYSIS •

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## INVESTMENT ASSUMPTIONS

				1992\$ Budget	Start Year	End Year	Number of employees	Resale Cycle
-----				-----	-----	-----	-----	-----
<b>Pre-Development Costs</b>								
Planning & Predevelopment				1,000,000	1992	1992		0 yrs
Infrastructure				0	1992	1992		0 yrs
Area Development				0	1992	1992		0 yrs
<b>Parking Structure</b>								
	# Spaces	Dev. Cost \$/Space						
-----				-----				
Phase 1	0	\$0		0	1992	1992		0 yrs
Phase 2	0	\$0		0	1992	1992		0 yrs
Phase 3	0	\$0		0	1992	1992		0 yrs
<b>Entertainment Center Development</b>								
	Sq.Ft.	\$/Sq.Ft.						
-----				-----				
Observ. Lounge - Music Club	4,600	\$101		464,500	1992	1992		0 yrs
Queen's Salon - Dinner Theater	6,400	\$75		482,000	1992	1992		0 yrs
Royal Salon & King's View - Sport Bar	4,000	\$131		525,000	1992	1992		0 yrs
Wedding Chapel & Vict. Room - Magic Club	3,300	\$117		386,000	1992	1992		0 yrs
Chelsea Cafe - Restaurant	2,000	\$151		302,000	1992	1992		0 yrs
Brittania Salon - Comedy Club	0	\$0		0	1992	1992		0 yrs
Veranda Grill - Music/Dance Club	4,000	\$101		402,500	1992	1992		0 yrs
Promenade Cafe Lounge - Rest.	4,100	\$147		603,850	1992	1992		0 yrs
Sir Winston Room - Restaurant	3,500	\$87		305,000	1992	1992		0 yrs
<b>Card Club</b>								
Brittania Salon - Card Club	0	\$0		0	1992	1992		0 yrs
<b>Other Improved Areas</b>								
Visitor Support Area - Misc.	13,000	\$4		54,000	1992	1992		0 yrs
Rehabilitation of Entertainment Center				867,713	2007	2007		0 yrs
<b>Deferred Maintenance</b>								
Phase 1				5,987,045	1992	1992		0 yrs
Phase 2				21,119,175	1993	1995		0 yrs
<b>Museum &amp; Tour Development</b>								
	Sq.Ft.	\$/Sq.Ft.						
-----				-----				
Phase 1	15,000	\$13		200,000	1992	1992		0 yrs
Rehabilitation of Museum & Tour	15,000	\$13		200,000	2007	2007		0 yrs
Phase 3	0	\$0		0	1992	1992		0 yrs
<b>Retail Development</b>								
	Sq.Ft.	\$/Sq. Ft.						
-----				-----				
Phase 1	11,000	\$8		90,000	1992	1992		0 yrs
Rehabilitation of Retail	11,000	\$8		90,000	2007	2007		0 yrs
Phase 3	0	\$0		0	1992	1992		0 yrs

## OPERATING ASSUMPTIONS

-----  
Utility ExpensesAnnual  
Cost

Telephone	\$92,000
Water	\$180,000
Gas	\$180,000
Electric	\$1,450,000

## Other Expenses

Property Taxes	500,000
Wages & Salaries	10,430,000
Advertising & Promotion	1,810,000
Maintenance & Repairs	4,853,000
Operating Supplies	680,000
Contract Entertainment	910,000
General & Administrative	1,310,000
Card Club Operating Expenses	0

Cost of Goods Sold Factor 28.2%

## GROUND LEASE ASSUMPTIONS

## -----

Percentage Rents (Gross Revenue)	
Minimum Rent	
Land Value/Foot	\$12.00
Land Area (Acres)	45
Lease Constant	10.0%

Entertainment Center/Retail	Card Club	Museum & Tour	Food & Beverage
5.0%	5.0%	5.0%	3.0%

## REVENUES

-----  
Entertainment Center

Sales/Person

Dinner Theater	
Admissions/Meals & Alcohol	\$30.00
Museum & Tour	
Admissions	\$4.65
Other Clubs & Bars	
Admissions	\$11.65
Meals & Alcohol	\$10.00

## Card Club Revenues

Percent  
Breakdown

Fees & Rake	0.00%*** Gaming Tax Rate Applicable
Food & Beverage	0.00%
Number of Card Tables	0

## Other Revenue Sources

Sales/S.F

Retail Spending Per Square Foot	\$275.00
Hotel Rooms Available	0
Daily Rate Per Room	\$0
Occupancy Rate	0.0%
Annual Hotel Revenues	\$0

## INDUCED ASSUMPTIONS

-----

## QUEEN MARY CENTER Employee &amp; Visitor Impacts to Long Beach

	Supported Rooms	Daily Rate	Annual Revenues	Additional Employees
	-----	-----	-----	-----
Hotels	100	\$80	\$2,920,000	100
Retail Spending			\$1,460,000	15

## NON-FINANCIAL ASSUMPTIONS

-----

# of Employees				
Entertainment Center/Restaurants	5/1000 sf			160
Museum & Tour	3/1000 sf			45
Card Club	4/table			0
Food/Beverage Carts				10
Retail	2/1000 sf			22
Ship Maintenance				50
Average Salary - Indirects				\$27,500
Inflation Rate				0.0%
City NPV Discount Rate				9.0%
Land Value Increase for Tax Assessment				4.00%
NPV Discount Rate for Unleveraged Cash Flow		18.0% &		20.0%
NPV Discount Rate for Leveraged Cash Flow		25.0% &		30.0%

## LOAN ASSUMPTIONS

-----

Percentage of Capital Costs Funded	0.0%
Loan Interest Rate	10.0%

## TAX RATE ASSUMPTIONS

-----

	City
Long Beach Property Tax Portion	27.5%
County Property Tax Portion	47.8%
Hotel Bed Tax Rate	10.00%
Telephone - Utility Tax Rate	5.0%
Water - Utility Tax Rate	5.0%
Gas - Utility Tax Rate	5.0%
Electric - Utility Tax Rate	8.4%
Long Beach Gaming Tax Rate	0.0%
L.A. County Sales Tax Rate	0.25%
Long Beach Sales Tax Rate	1.00%
Long Beach Miscellaneous Taxes:	
Business License Fee	\$5,000
Business License Tax Per Employee	\$8.26 /per Employee

## INDIRECT IMPACT ASSUMPTIONS

-----

Percentage Impact from Direct Spending	110.00%
Long Beach Economic Activity Impact Factor	20.00%
L.A. County Economic Activity Impact Factor	50.00%
Long Beach Indirect Tax Portion of Economic Activity	0.50%
L.A. County Indirect Tax Portion of Economic Activity	0.25%

	30 YEAR TOTAL	(000'S)												
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Capital Spending														
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,471	3,471	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	922	54	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	5,987	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0
Museum & Tour Development	400	200	0	0	0	0	0	0	0	0	0	0	0	0
Retail Development	180	90	0	0	0	0	0	0	0	0	0	0	0	0
Queen Mary Operational Spending														
Retail Spending	130,075	0	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Induced Economic Activity														
Retail Spending	42,340	0	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460
Hotel Spending	84,680	0	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
Direct Economic Activity														
Capital Improvements		10,802	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	369,183	0	11,853	11,993	12,135	12,280	12,428	12,694	12,731	12,769	12,810	12,853	12,782	12,714
Food & Beverage Sales	428,500	0	13,500	13,700	13,900	14,100	14,300	14,600	14,700	14,800	14,900	15,000	15,000	15,000
Card Club Fees & Rake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Merchandise Sales	130,075	0	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilization Factors														
Entertainment Center Attendance		0	750,000	770,000	790,000	810,000	830,000	860,000	870,000	880,000	890,000	900,000	900,000	900,000
Dinner Theater Attendance		0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		0	670,000	649,900	630,403	611,491	593,146	575,352	558,091	541,349	525,108	509,355	494,074	479,252
Card Club Revenue/Table		\$0	\$300,000	\$325,000	\$350,000	\$375,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		0%	80%	79%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%



		(000'S)												
	30 YEAR TOTAL	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Capital Spending</b>														
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Structure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Entertainment Center Development	3,471	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Improved Areas	922	0	0	868	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	0	0	0	0	0	0	0	0	0	0	0	0	0
Museum & Tour Development	400	0	0	200	0	0	0	0	0	0	0	0	0	0
Retail Development	180	0	0	90	0	0	0	0	0	0	0	0	0	0
<b>Queen Mary Operational Spending</b>														
Retail Spending	130,075	3,025	3,025	3,025	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050
Hotel Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Induced Economic Activity</b>														
Retail Spending	42,340	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460	1,460
Hotel Spending	84,680	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920	2,920
<b>Direct Economic Activity</b>														
Capital Improvements		0	0	1,158	0	0	0	0	0	0	0	0	0	0
Entertainment Center Admissions	369,183	12,647	12,582	12,519	12,458	12,399	12,341	12,286	12,232	12,179	12,128	12,079	12,031	11,985
Food & Beverage Sales	428,500	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Card Club Fees & Rake	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Merchandise Sales	130,075	3,025	3,025	3,025	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050
Hotel Room Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Utilization Factors</b>														
Entertainment Center Attendance		900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000	900,000
Dinner Theater Attendance		200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Museum & Tour Attendance		464,874	450,928	437,400	424,278	411,550	399,203	387,227	375,611	364,342	353,412	342,810	332,525	322,550
Card Club Revenue/Table		\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Operating Expense Factors		78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>DIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$10,802	\$35,418	\$35,757	\$36,100	\$29,405	\$29,753	\$30,319	\$30,456	\$30,594	\$30,735	\$30,878	\$30,807	\$30,739
Jobs		0	403	403	403	403	403	403	403	403	403	403	403	403
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	5,586	0	165	167	169	171	173	176	177	178	179	180	180	180
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	0	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	245	0	8	8	8	8	8	8	8	8	8	8	8	8
Total Fiscal Revenue	17,164	\$0	\$318	\$463	\$471	\$479	\$487	\$496	\$504	\$512	\$520	\$529	\$537	\$545
<b>L.A. COUNTY</b>														
Economic Activity		\$10,802	\$35,418	\$35,757	\$36,100	\$29,405	\$29,753	\$30,319	\$30,456	\$30,594	\$30,735	\$30,878	\$30,807	\$30,739
Jobs		0	403	403	403	403	403	403	403	403	403	403	403	403
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	1,396	0	41	42	42	43	43	44	44	45	45	45	45	45
Total Fiscal Revenue	13,816	\$0	\$41	\$290	\$301	\$312	\$323	\$335	\$347	\$359	\$372	\$385	\$399	\$413
<b>INDUCED IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$0	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$423	\$0	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15
Hotel Bed Taxes	8,468	0	292	292	292	292	292	292	292	292	292	292	292	292
Total Fiscal Revenue	8,891	\$0	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307	\$307
<b>L.A. COUNTY</b>														
Economic Activity		\$0	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		0	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$106	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4
Total Fiscal Revenue	\$106	\$0	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4
<b>INDIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$2,376	\$8,755	\$8,830	\$8,906	\$7,433	\$7,509	\$7,634	\$7,664	\$7,694	\$7,725	\$7,757	\$7,741	\$7,726
Jobs		26	96	96	97	81	82	83	84	84	84	85	84	84
Fiscal Revenues														
Indirect Taxes	\$1,172	\$0	\$44	\$44	\$45	\$37	\$38	\$38	\$38	\$38	\$39	\$39	\$39	\$39
<b>L.A. COUNTY</b>														
Economic Activity		\$5,941	\$21,889	\$22,075	\$22,264	\$18,582	\$18,773	\$19,085	\$19,160	\$19,236	\$19,313	\$19,392	\$19,353	\$19,315
Jobs		65	239	241	243	203	205	208	209	210	211	212	211	211
Fiscal Revenues														
Indirect Taxes	\$1,465	\$0	\$55	\$55	\$56	\$46	\$47	\$48	\$48	\$48	\$48	\$48	\$48	\$48

	30 YEAR TOTAL	2005	(000'S) 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>DIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$30,672	\$30,607	\$31,702	\$33,508	\$33,449	\$33,391	\$33,336	\$33,282	\$33,229	\$33,178	\$33,129	\$33,081	\$33,035
Jobs		403	403	403	436	436	436	436	436	436	436	436	436	436
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	5,586	180	180	180	211	211	211	211	211	211	211	211	211	211
Hotel Bed Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	144	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	245	8	8	8	9	9	9	9	9	9	9	9	9	9
<b>Total Fiscal Revenue</b>	<b>17,164</b>	<b>\$553</b>	<b>\$562</b>	<b>\$571</b>	<b>\$611</b>	<b>\$621</b>	<b>\$631</b>	<b>\$642</b>	<b>\$653</b>	<b>\$665</b>	<b>\$677</b>	<b>\$689</b>	<b>\$702</b>	<b>\$716</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$30,672	\$30,607	\$31,702	\$33,508	\$33,449	\$33,391	\$33,336	\$33,282	\$33,229	\$33,178	\$33,129	\$33,081	\$33,035
Jobs		403	403	403	436	436	436	436	436	436	436	436	436	436
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	1,396	45	45	45	53	53	53	53	53	53	53	53	53	53
<b>Total Fiscal Revenue</b>	<b>13,816</b>	<b>\$428</b>	<b>\$443</b>	<b>\$459</b>	<b>\$483</b>	<b>\$500</b>	<b>\$518</b>	<b>\$537</b>	<b>\$556</b>	<b>\$576</b>	<b>\$597</b>	<b>\$619</b>	<b>\$642</b>	<b>\$665</b>
<b>INDUCED IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$423	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15
Hotel Bed Taxes	8,468	292	292	292	292	292	292	292	292	292	292	292	292	292
<b>Total Fiscal Revenue</b>	<b>8,891</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>	<b>\$307</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380	\$4,380
Jobs		115	115	115	115	115	115	115	115	115	115	115	115	115
Fiscal Revenues														
Sales Taxes	\$106	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4
<b>Total Fiscal Revenue</b>	<b>\$106</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>	<b>\$4</b>
<b>INDIRECT IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$7,711	\$7,697	\$7,938	\$8,335	\$8,322	\$8,310	\$8,297	\$8,286	\$8,274	\$8,263	\$8,252	\$8,241	\$8,231
Jobs		84	84	87	91	91	91	91	90	90	90	90	90	90
Fiscal Revenues														
Indirect Taxes	\$1,172	\$39	\$38	\$40	\$42	\$42	\$42	\$41	\$41	\$41	\$41	\$41	\$41	\$41
<b>L.A. COUNTY</b>														
Economic Activity		\$19,278	\$19,243	\$19,845	\$20,838	\$20,806	\$20,774	\$20,744	\$20,714	\$20,685	\$20,657	\$20,630	\$20,604	\$20,578
Jobs		210	210	216	227	227	227	226	226	226	225	225	225	224
Fiscal Revenues														
Indirect Taxes	\$1,465	\$48	\$48	\$50	\$52	\$52	\$52	\$52	\$52	\$52	\$52	\$52	\$52	\$51

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>TOTAL IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$13,178	\$48,553	\$48,967	\$49,385	\$41,218	\$41,642	\$42,333	\$42,499	\$42,669	\$42,841	\$43,015	\$42,929	\$42,845
Jobs		26	613	613	614	598	599	600	601	601	601	602	602	601
Fiscal Revenues														
Property Taxes	\$7,145	\$0	\$0	\$143	\$149	\$155	\$161	\$167	\$174	\$181	\$188	\$196	\$204	\$212
Sales Taxes	6,009	0	180	182	184	186	188	191	192	193	194	195	195	195
Hotel Bed Taxes	8,468	0	292	292	292	292	292	292	292	292	292	292	292	292
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	0	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	245	0	8	8	8	8	8	8	8	8	8	8	8	8
Indirect Taxes	1,172	0	44	44	45	37	38	38	38	38	39	39	39	39
Total Fiscal Revenue	\$27,227	\$0	\$668	\$814	\$822	\$822	\$831	\$841	\$849	\$857	\$865	\$874	\$882	\$890
<b>L.A. COUNTY</b>														
Economic Activity		\$16,743	\$61,686	\$62,213	\$62,743	\$52,367	\$52,906	\$53,784	\$53,995	\$54,210	\$54,429	\$54,651	\$54,541	\$54,434
Jobs		65	756	758	760	720	722	725	726	727	728	729	728	728
Fiscal Revenues														
Property Taxes	\$12,420	\$0	\$0	\$249	\$259	\$269	\$280	\$291	\$302	\$315	\$327	\$340	\$354	\$368
Sales Taxes	1,502	0	45	45	46	46	47	48	48	48	48	49	49	49
Indirect Taxes	1,465	0	55	55	56	46	47	48	48	48	48	48	48	48
Total Fiscal Revenue	\$15,387	\$0	\$100	\$349	\$360	\$362	\$373	\$386	\$398	\$411	\$424	\$437	\$451	\$465

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>TOTAL IMPACTS</b>														
<b>LONG BEACH</b>														
Economic Activity		\$42,763	\$42,684	\$44,020	\$46,223	\$46,151	\$46,081	\$46,013	\$45,947	\$45,883	\$45,821	\$45,761	\$45,703	\$45,646
Jobs		601	601	604	642	641	641	641	641	641	641	641	641	640
Fiscal Revenues														
Property Taxes	\$7,145	\$220	\$229	\$238	\$248	\$258	\$268	\$279	\$290	\$301	\$313	\$326	\$339	\$352
Sales Taxes	6,009	195	195	195	225	225	225	225	225	225	225	225	225	225
Hotel Bed Taxes	8,468	292	292	292	292	292	292	292	292	292	292	292	292	292
Card Club Gaming Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utility Taxes	4,188	144	144	144	144	144	144	144	144	144	144	144	144	144
Business License Fees	245	8	8	8	9	9	9	9	9	9	9	9	9	9
Indirect Taxes	1,172	39	38	40	42	42	42	41	41	41	41	41	41	41
<b>Total Fiscal Revenue</b>	<b>\$27,227</b>	<b>\$898</b>	<b>\$907</b>	<b>\$917</b>	<b>\$959</b>	<b>\$969</b>	<b>\$979</b>	<b>\$990</b>	<b>\$1,001</b>	<b>\$1,013</b>	<b>\$1,025</b>	<b>\$1,037</b>	<b>\$1,050</b>	<b>\$1,064</b>
<b>L.A. COUNTY</b>														
Economic Activity		\$54,330	\$54,230	\$55,927	\$58,726	\$58,634	\$58,546	\$58,459	\$58,375	\$58,294	\$58,215	\$58,139	\$58,065	\$57,993
Jobs		727	727	734	778	778	777	777	777	776	776	776	775	775
Fiscal Revenues														
Property Taxes	\$12,420	\$383	\$398	\$414	\$430	\$448	\$466	\$484	\$504	\$524	\$545	\$566	\$589	\$613
Sales Taxes	1,502	49	49	49	56	56	56	56	56	56	56	56	56	56
Indirect Taxes	1,465	48	48	50	52	52	52	52	52	52	52	52	52	51
<b>Total Fiscal Revenue</b>	<b>\$15,387</b>	<b>\$480</b>	<b>\$495</b>	<b>\$512</b>	<b>\$539</b>	<b>\$556</b>	<b>\$574</b>	<b>\$592</b>	<b>\$612</b>	<b>\$632</b>	<b>\$653</b>	<b>\$674</b>	<b>\$697</b>	<b>\$720</b>

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>PRE-FINANCING CASH FLOW (\$000)</b>														
Revenue														
Admissions - Ent. Center	296,493	0	8,738	8,971	9,204	9,437	9,670	10,019	10,136	10,252	10,369	10,485	10,485	10,485
Admissions - Museum & Tours	60,917	0	3,116	3,022	2,931	2,843	2,758	2,675	2,595	2,517	2,442	2,368	2,297	2,229
Food & Beverage	254,500	0	7,500	7,700	7,900	8,100	8,300	8,600	8,700	8,800	8,900	9,000	9,000	9,000
Merchandise	130,075	0	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025	3,025
Dinner Theater	174,000	0	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Card Club Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(-) Cost of Goods Sold	(157,518)	0	(4,660)	(4,716)	(4,773)	(4,829)	(4,886)	(4,970)	(4,998)	(5,027)	(5,055)	(5,083)	(5,083)	(5,083)
Net Revenues	758,467	0	23,718	24,001	24,287	24,576	24,867	25,349	25,457	25,568	25,680	25,795	25,724	25,655
Operating Expenses														
Property Taxes	16,539	0	525	525	524	530	537	547	549	552	554	557	556	554
Wages & Salaries	329,049	0	10,443	10,436	10,427	10,550	10,675	10,879	10,927	10,977	11,028	11,079	11,054	11,029
Advertising & Promotion	57,226	0	1,816	1,815	1,813	1,835	1,857	1,892	1,900	1,909	1,918	1,927	1,922	1,918
Maintenance & Repair	157,371	0	4,995	4,991	4,987	5,046	5,106	5,203	5,226	5,250	5,274	5,299	5,287	5,275
Operating Supplies	21,460	0	681	681	680	688	696	709	713	716	719	723	721	719
Contract Entertainment	28,613	0	908	907	907	917	928	946	950	955	959	963	961	959
General & Administrative	40,687	0	1,291	1,290	1,289	1,305	1,320	1,345	1,351	1,357	1,364	1,370	1,367	1,364
Card Club Operating Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	55,158	0	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902
Total Operating Expenses	706,102	0	22,561	22,547	22,529	22,774	23,020	23,423	23,519	23,618	23,718	23,820	23,769	23,720
Net Operating Income	52,365	0	1,157	1,454	1,758	1,802	1,847	1,926	1,938	1,950	1,963	1,976	1,955	1,935
Other Expenses														
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Lease Payments	68,215	0	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
Adjusted Net Operating Income	(15,850)	0	(1,195)	(898)	(594)	(550)	(506)	(426)	(414)	(402)	(390)	(376)	(397)	(417)
Capital Costs														
Pre-Development Costs	1,000	1,000	0	0	0	0	0	0	0	0	0	0	0	0
Leasehold Improvements	4,973	3,815	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	5,987	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0
Total Capital Costs	33,079	10,802	7,040	7,040	7,040	0	0	0	0	0	0	0	0	0
Pre-Financing Cash Flow	(48,929)	(10,802)	(8,235)	(7,938)	(7,634)	(550)	(506)	(426)	(414)	(402)	(390)	(376)	(397)	(417)
Cumulative Cash Flow		(10,802)	(19,037)	(26,975)	(34,609)	(35,159)	(35,665)	(36,090)	(36,505)	(36,907)	(37,297)	(37,673)	(38,070)	(38,487)
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Free & Clear Cash (NOI/Cost)		0.00%	6.48%	5.84%	5.51%	5.65%	5.78%	6.03%	6.07%	6.11%	6.15%	6.19%	6.13%	6.06%
Adjusted NOI/Cost		0.00%	-6.70%	-3.61%	-1.86%	-1.72%	-1.58%	-1.33%	-1.30%	-1.26%	-1.22%	-1.18%	-1.24%	-1.31%
Internal Rate of Return	-100.00%													
Net Present Value @ 18.0%	(\$25,222)													
Net Present Value @ 20.0%	(\$24,159)													

	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>PRE-FINANCING CASH FLOW (\$000)</b>														
Revenue														
Admissions - Ent. Center	296,493	10,485	10,485	10,485	10,485	10,485	10,485	10,485	10,485	10,485	10,485	10,485	10,485	10,485
Admissions - Museum & Tours	60,917	2,162	2,097	2,034	1,973	1,914	1,856	1,801	1,747	1,694	1,643	1,594	1,546	1,500
Food & Beverage	254,500	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
Merchandise	130,075	3,025	3,025	3,025	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050
Dinner Theater	174,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Card Club Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(-) Cost of Goods Sold	(157,518)	(5,083)	(5,083)	(5,083)	(5,936)	(5,936)	(5,936)	(5,936)	(5,936)	(5,936)	(5,936)	(5,936)	(5,936)	(5,936)
Net Revenues	758,467	25,589	25,524	25,461	27,572	27,513	27,455	27,400	27,345	27,293	27,242	27,193	27,145	27,099
Operating Expenses														
Property Taxes	16,539	553	552	551	604	603	602	601	600	599	598	597	597	596
Wages & Salaries	329,049	11,005	10,982	10,959	12,023	12,001	11,981	11,961	11,941	11,923	11,904	11,887	11,870	11,853
Advertising & Promotion	57,226	1,914	1,910	1,906	2,091	2,087	2,084	2,080	2,077	2,074	2,070	2,067	2,064	2,061
Maintenance & Repair	157,371	5,263	5,252	5,241	5,750	5,740	5,730	5,720	5,711	5,702	5,693	5,685	5,677	5,669
Operating Supplies	21,460	718	716	715	784	783	781	780	779	778	776	775	774	773
Contract Entertainment	28,613	957	955	953	1,045	1,044	1,042	1,040	1,038	1,037	1,035	1,034	1,032	1,031
General & Administrative	40,687	1,361	1,358	1,355	1,487	1,484	1,481	1,479	1,477	1,474	1,472	1,470	1,468	1,466
Card Club Operating Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	55,158	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902	1,902
Total Operating Expenses	706,102	23,673	23,627	23,582	25,686	25,644	25,603	25,564	25,525	25,488	25,452	25,417	25,383	25,350
Net Operating Income	52,365	1,916	1,897	1,879	1,886	1,869	1,852	1,836	1,820	1,805	1,790	1,776	1,762	1,749
Other Expenses														
Card Club City Tax @ 0.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Lease Payments	68,215	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
Adjusted Net Operating Income	(15,850)	(436)	(455)	(473)	(466)	(484)	(500)	(516)	(532)	(547)	(562)	(576)	(590)	(604)
Capital Costs														
Pre-Development Costs	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Leasehold Improvements	4,973	0	0	1,158	0	0	0	0	0	0	0	0	0	0
Deferred Maintenance	27,106	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Capital Costs	33,079	0	0	1,158	0	0	0	0	0	0	0	0	0	0
Pre-Financing Cash Flow	(48,929)	(436)	(455)	(1,631)	(466)	(484)	(500)	(516)	(532)	(547)	(562)	(576)	(590)	(604)
Cumulative Cash Flow		(38,924)	(39,379)	(41,010)	(41,476)	(41,960)	(42,460)	(42,976)	(43,508)	(44,056)	(44,618)	(45,194)	(45,784)	(46,388)
ECONOMIC RETURNS & INDICES														
Free & Clear Cash (NOI/Cost)		6.00%	5.94%	5.68%	5.70%	5.65%	5.60%	5.55%	5.50%	5.46%	5.41%	5.37%	5.33%	5.29%
Adjusted NOI/Cost		-1.37%	-1.43%	-1.43%	-1.41%	-1.46%	-1.51%	-1.56%	-1.61%	-1.65%	-1.70%	-1.74%	-1.78%	-1.82%
Internal Rate of Return	-100.00%													
Net Present Value @ 18.0%	(\$25,222)													
Net Present Value @ 20.0%	(\$24,159)													

	30 YEAR TOTAL	1992	1993	1994	1995	(000'S) 1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>LEVERAGED CASH FLOW (\$000)</b>														
<b>Recap:</b>														
Annual Pre-Financing Cash Flow		(10,802)	(8,235)	(7,938)	(7,634)	(550)	(506)	(426)	(414)	(402)	(390)	(376)	(397)	(417)
Development Financing														
{+} Draws	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Interest Payments	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Principal Repayment	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Dev. Financing (Repayment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow (Equity)	(48,929)	(10,802)	(8,235)	(7,938)	(7,634)	(550)	(506)	(426)	(414)	(402)	(390)	(376)	(397)	(417)
Cumulative Cash Flow	-----	(10,802)	(19,037)	(26,975)	(34,609)	(35,159)	(35,665)	(36,090)	(36,505)	(36,907)	(37,297)	(37,673)	(38,070)	(38,487)
<b>ECONOMIC RETURNS &amp; INDICES</b>														
Debt Service Coverage		n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m
Cumulative Equity Investment		10,802	17,842	24,881	31,921	31,921	31,921	31,921	31,921	31,921	31,921	31,921	31,921	31,921
Return on Equity (NOCF/Equity)			-46.16%	-31.90%	-23.91%	-1.72%	-1.58%	-1.33%	-1.30%	-1.26%	-1.22%	-1.18%	-1.24%	-1.31%
Internal Rate of Return	-100.00%													
Net Present Value @ 25.0%	(\$21,890)													
Net Present Value @ 30.0%	(\$20,027)													



	30 YEAR TOTAL	(000'S)												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
LEVERAGED CASH FLOW (\$000)														
Recap:														
Annual Pre-Financing Cash Flow		(436)	(455)	(1,631)	(466)	(484)	(500)	(516)	(532)	(547)	(562)	(576)	(590)	(604)
Development Financing														
{+} Draws	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Interest Payments	0	0	0	0	0	0	0	0	0	0	0	0	0	0
{-} Principal Repayment	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Dev. Financing (Repayment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow (Equity)	(48,929)	(436)	(455)	(1,631)	(466)	(484)	(500)	(516)	(532)	(547)	(562)	(576)	(590)	(604)
Cumulative Cash Flow		(38,924)	(39,379)	(41,010)	(41,476)	(41,960)	(42,460)	(42,976)	(43,508)	(44,056)	(44,618)	(45,194)	(45,784)	(46,388)
ECONOMIC RETURNS & INDICES														
Debt Service Coverage		n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m	n.m
Cumulative Equity Investment		31,921	31,921	33,079	33,079	33,079	33,079	33,079	33,079	33,079	33,079	33,079	33,079	33,079
Return on Equity (NOCF/Equity)		-1.37%	-1.43%	-4.93%	-1.41%	-1.46%	-1.51%	-1.56%	-1.61%	-1.65%	-1.70%	-1.74%	-1.78%	-1.82%
Internal Rate of Return	-100.00%													
Net Present Value @ 25.0%	(\$21,890)													
Net Present Value @ 30.0%	(\$20,027)													

## PROPOSAL LOG

### COMPANY/INDIVIDUAL

### IDEA

Triad  
Hugh Clegg  
Larry Braun  
Economics Research Associates  
David Hoffman  
Newman Properties

Alfred Harrow  
Robert Lenzer

Mariner Hotel Corporation  
Carol Sharp, Prudential Realty  
Hornblower  
Larry Taylor Properties  
German Reyer  
Cynthia Shusthers  
Ned Middleton  
Knudson-McHugh Consulting  
Amorlast Products Company  
Fahaney & Carroll  
Citizens Advisory Committee  
Robert Paternoster

Alan Coles

Queen City Bank  
Christine Nordstrom

Mrs. Frank Brown  
Neil Moore  
Don Muchmore  
Steve Westbrook  
Frank Rivera  
Otto Westby  
John Flynn  
Douglas Erhard

Robert Skillstad

N/A  
Homeless shelter  
Casino/Off-Track/Bingo  
Aquarium/Casey's sport park  
Senior cruises  
Theme park, International outlet, amphitheater  
Permanent World's Fair Convention  
Cruise market as ship, cruise to nowhere  
Manage hotel  
Renaissance Festival, retail  
Manage property  
Film studio and theme park  
Casino  
Sports arena/stadium  
Sink/Diving attraction  
Theme park discovery  
Management property  
N/A  
Aquarium, High School, Icon  
Pacific Rim exposition/festival marketplace  
Scrap/new development at site, landmark  
Lock up, auction contents  
Open up shopping area, exotic gardens  
Restore fittings/no boarding fee  
Gambling  
Old Pike, no gate fee  
Gambling  
Mall, Dances  
Lower price  
Cruise terminal  
Amusement park, mall, timeshare/condos/murder mystery  
Card club/strip club

Darrell Stafford

L. Daigeaolt  
Queen Mary Foundation

Harold Neibling  
Richfield Hotel Management Inc.  
Federal Construction Company  
Russ Cugno  
G. Colman

Lester Wolff

Mary Tomlinson

Aircraft Systems & Procedures

Bernardo Teitel

William Cwiklo

Steven Queen  
Gina Rodegheir  
Lee Halper  
F.H. Gardner  
PST Pacific Specialty Tours  
Susan Rawlings  
Cathey Pickney

Turn over to company, reduce  
prices, sell shares  
Pike, gambling  
Swimming pool, restored, health  
club, card casino, entertainment  
center, multiplex theater, IMAX,  
gym, dinner theater, amphitheater  
Mothball, build restaurant strip  
Manage hotel  
Manage  
Marketing/management  
Gambling, entertainment center,  
amphitheater  
Lower fee once a month,  
champagne parties, advertising  
Movie screenings, get big names  
who stayed, gambling  
Fixed cruise ship experience,  
Catalina  
Sea lab, Space lab, trans lab,  
computer lab  
Revitalize, renovate, health club,  
private club, gaming  
N/A  
Revitalize, maritime museum  
Fixed cruise ship experience  
College dorm/school  
N/A  
Amusement park  
Close hotel/ office space

# **RADOS INTERNATIONAL CORPORATION**

**P. O. BOX 830**

**SAN PEDRO, CALIFORNIA**

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**QUEEN MARY**

**ANALYSIS OF THE PHYSICAL CONDITION**

**AND**

**COST TO MAINTAIN**

VOLUME III  
COST/ENGINEERING

*QUEEN MARY*



FOR  
THE CITY OF LONG BEACH  
AND  
THE PORT OF LONG BEACH

Prepared By:  
**Rados International Corp.**

1300 Beacon Street San Pedro, Ca, 90731 Phone: 310-547-1173, Fax: 310-548-1305



**Economics Research Associates**

*Affiliated with Drivers Jonas*

Los Angeles  
San Francisco  
San Diego  
Chicago  
Boston  
Washington, D.C.  
Fort Lauderdale

**Volume III  
COST/ENGINEERING**

**PREPARED FOR  
THE CITY OF LONG BEACH  
AND  
THE PORT OF LONG BEACH**

**JULY 1992**

**PREPARED BY  
RADOS INTERNATIONAL CORPORATION**

**PROJECT NO. 10518**

10990 Wilshire Boulevard, Suite 1600, Los Angeles, California 90024  
(310) 477-9585 Telex: 857661 (ECON RES LA) Fax: (310) 478-1950

## **PREFACE**

Upon the Queen Mary's arrival to the Port of Long Beach, many feasibility studies were performed to best determine its mode of operation.

As a result of economic projections performed by the City of Long Beach, it was decided to re-classify the Queen Mary as a floating structure thus eliminating maritime trades for conversion and operation of the vessel. Uniform building codes thus became applicable for repair and modifications to the Queen Mary.

At the time the ship was designed and built, it exceeded the stringent codes of maritime classification societies, which for the most part, assumed loads far in excess of land based uniform building codes.

The term "industry standards" as used frequently throughout this report, refers to an accumulation of standards of the Uniform Building Codes, national fire codes, national electric codes, O.S.H.A., and the maritime classification societies such as (ABS) American Bureau of Shipping, Lloyds of London, (USCG) United States Coast Guard, (IMCO) International Maritime Consulting Organization, and (SOLAS) Safety of Life at Sea.

These standards, if applied during the Queen Mary conversion in 1969-71 would have guaranteed the vessel of a standard which was operationally safe, clear of defects, and well kept. These standards which address both commercial and marine building codes, as applied to the Queen Mary, cannot totally satisfy either, as they exist today.

Estimates of the life span of the vessel can not be projected without drydocking the vessel. Effects of electrolysis and plate deterioration can be determined, only by a complete and thorough inspection of the ship out of water.



**Volume III**

**QUEEN MARY FINAL REPORT OUTLINE**

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- V. AN INVESTIGATION OF THE QUEEN MARY EXTERIOR AND INTERIOR HULL PLATING STUDY PERFORMED DECEMBER 1990
- VI. CURRENT HULL ANALYSIS & REPORT OF FINDINGS
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**Volume III**  
**SECTION I**

*QUEEN MARY*

VESSEL ANALYSIS

SUMMARY

# **QUEEN MARY VESSEL ANALYSIS**

## **INTRODUCTION**

In accordance with the Consulting Services Contract dated April 30, 1992 between the City of Long Beach, a Municipal Corporation acting by and through it's Board of Harbor Commissioners, and Economics Research Associates (ERA), Rados International Corporation (RIC) a Sub-Consultant to ERA, has assumed the responsibility to analyze the present physical condition of the Queen Mary, and perform the following studies:

- 1) Determine the estimated costs necessary to bring the floating structure up to industry standards.
- 2) To evaluate the maintenance costs of the floating structure.
- 3) To determine the projected cost of new use concepts for the floating structure.

The team of Naval Architects and Marine Engineers from RIC, shipchecked & inspected the floating structure for the purpose of determining the condition of the:

- a) Hull Structure in respects to the effects of corrosion, fire safety, and asbestos danger.
- b) The Mechanical Systems including Air Conditioning, Heating, Sewage, Fire Main, Fresh Water, and Steam.
- c) The Electrical System, including Load Centers, Main Distribution Panels, Transformers, Sub Panel, and Wireways.

The intention of this study is to determine the estimated costs necessary to bring the Queen Mary up to industry standards where possible.

As part of accomplishing this task, specifications and drawings of the Queen Mary were researched and evaluated including hull structures, deck compartmentation, machinery piping system and electrical components. Components and areas that were accessible, were inspected. Some significant areas of the ship that were considered as potential problem areas and could have cost impacts to the study were not inspected. Due to their

locations and/or the inability to dismantle parts of the ships structures, such as the teak wood decks that cover steel deck plating; interior wood paneling that covers piping and wiring; material, and areas that contain asbestos, tanks that contain ballast, the underwater portion of the hull structure, and the overhead paneling that encloses firemain and sprinkling piping.



This engineering study will determine and evaluate the estimated costs to repair and maintain the structure and facilities and address new concepts developed by ERA.

Using the technical information provided by the inspection engineers, our estimating department has generated a "Projected Cost Estimate" for needed repairs, modifications, and new use concepts. The purpose of this undertaking is to provide the City and the Port of Long Beach, technical and financial information in order to assist in determining recommendations, regarding the present use and future of the Queen Mary. Projected cost estimates are developed for the following items:

- Item I      Analysis of the Physical Condition of  
the Queen Mary and Minimum Required  
Investment to Bring the Complex up to  
Industry Standards.

**Item II** Minimum Required Investment Cost for Maintenance Operations on the Queen Mary.

**Item III** Evaluation of New Use Concepts developed by Economic Research Associates.

The Projected Cost Estimates (PCE) developed from the investigation of the structures and systems, provides information in a range of costs, because of the inexact nature and inability to precisely identify all unknown costs. It is not possible to accurately estimate from available drawings and specifications, the necessary costs involved. The unavailability of equipment manuals, outdated equipment, and systems maintenance information is factored into the range of costs.

Past marine experiences have proven that retrofits (repairs, modifications and conversions) in areas that are not accessible, and for which engineering drawings are not available, provide uncertainties until actual demolition occurs and uncovers unknown conditions that might exist. These unknowns, more times than not, result in a chain reaction affecting areas and systems usually not considered. These costs have also been factored into the range of costs.

The estimated costs to perform the scope of work outlined in the following sections are presented in two categories:

- Immediate Repairs
- Deferred Repairs

*Immediate repairs* represent work that should be performed at the earliest possible date.

*Deferred repairs* identifies work that should be performed within a period of three (3) to five (5) years.

## **SUMMARY**

From actual investigations, audio gauge readings, reviews of engineering documents, and of various studies and reports, it is our opinion that the basic hull structure, in spite of some deterioration of the hull plating and rivets since its last drydocking, is adequate to allow for continued operation. The life of the hull plating and adjoining structure cannot be

determined until an underwater inspection and testing is performed on the entire 150,000 square feet of underwater surface area, or until the ship is drydocked to clean, inspect and audio gauge the hull bottom plating.

Additionally, machinery components and piping systems along with electrical equipment and wiring systems that require repairs and/or replacement, are opinioned to be adequately suited to allow for continued operation provided maintenance programs are implemented to prevent further deterioration of these systems. Each successive year the structure and/or systems are operated, gradually contributes to the overall decline. Even though the ship has been well maintained under the operation of Disney, the previous years of operation were highlighted by a poor maintenance program.

The conclusion of the Report, is based upon the scope of work study outlined in the following sections. The following Projected Cost Estimated (PCE) to upgrade the Queen Mary to Industry Standards, where applicable, are provided.

## **FACTORS**

A Maintenance Program should be implemented as soon as possible. Many of the recommendations listed herein are required to either keep the ship operating or to bring it up to acceptable quality standards. Following completion of these items, a Preventive Maintenance Program is necessary to keep the Floating Structure from considerable deterioration for an extended period of time.

Because of the volume of work required at so many locations throughout the ship, it is also our opinion that it would be necessary to accomplish that work in a minimum of a Three Year Planned Program. This would reduce the impacts on operations, improve efficiencies in Re-Construction and Management and allow for a more controlled cash flow.

Rados has attempted to provide an accurate statement of the vessels conditions, and accurate "Projected Cost Estimates" (PCE). The enclosed various cost projections are considered budgetary in nature. In some cases, where access to particular structures or systems was limited, educated guesses are provided based upon past experiences in the marine industry. All information and costs provided are predicated upon normal working hours and days. The information contained in this report is believed to be reasonably correct, but not guaranteed, and Rados International Corporation shall not be responsible for any errors, omissions or misrepresentations.

Due to the configuration of the ship, normal techniques of commercial building construction

do not apply. Conversion contractors working in a shipboard environment are usually limited to personnel experienced in the marine industry rather than those in building trades. These maritime shipwrights are accustomed to working in a compartment which is curved in almost every direction, while at the same time, floating and rolling from side-to-side. The normal building construction techniques which utilize plum bobs and carpenter levels, are not acceptable for most of these applications because of the curvature of the decks from shear and camber. This labor factor has been included in the costs to upgrade and maintain the ship.

A particular area of concern is developing costs related to this study, involve the inclusion of material handling costs for repairs, maintenance and remodeling. For any "area" aboard the ship, the transport of materials from the shore to specific locations within the ship, cause significant cost impacts not normally encountered. This logistics problem for the handling of large and heavy materials from shore to ship is difficult because of the necessity of heavy lift crane requirements and the necessity of multiple movements for each item to arrive at its final destination. The difficulties and cost impacts increase significantly as the materials are distributed and transferred throughout various compartments within the ship. Depending upon the location of the work-area, access for large steel plates, structural components, over sized equipment, panelling, carpet and like items is severely limited. Even though some trunk access is available, rail systems and rigging systems need to be installed in each space to transport oversized and heavy objects. The forward trunk space on decks "A", "B" and "R", were decked over during the conversion to create continuous decks and utilize the spaces more effectively. This covering negated the possibility of utilizing this trunk for material distribution. The uptakes in the boiler rooms, the areas from which all machinery and material was removed during the conversion, were recovered and the funnels replaced atop, thereby eliminating the trunks as viable material handling accesses. The aft trunk although more accessible, is limited to specific areas in the stern. Access for material handling through the convention area via double ramp doors is the most direct access for spaces within the convention areas and boiler rooms. Door access into each compartment limits the sizes of materials which can enter a space unless larger openings are created to transit throughout spaces within the ship. Replacing these cut-out openings additionally add to the cost factor of the material-handling phase.

In summary, considerable time and effort has been expended investigating systems aboard the ship, reviewing engineering documents and examining previous studies and reports of the various structures and systems aboard the Queen Mary. The following "Summary Sheet" represents the Projected Cost Estimates as determined for the minimum investment required to:

- a). Bring the complex up to industry standards.
- b). Provide for a comprehensive maintenance operation.
- c). Incorporate new use concepts as developed by ERA.



**HOTEL QUEEN MARY**  
**VESSEL ANALYSIS**

**RADOS INTERNATIONAL CORPORATION**  
**P.C.E. ESTIMATE**

**SUMMARY SHEET**

<b><u>CATEGORY</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>TOTAL</u></b>
<b>A)</b>	Analysis of the Physical Condition of the Queen Mary and Minimum Required Investment to Bring the Complex Up To Industry Standards	
	• Immediate Items	\$ <b><u>5,987,045.00</u></b>
	• Deferred Items	\$ <b><u>21,119,175.00</u></b>
	<b>TOTAL</b>	\$ <b><u>27,106,220.00</u></b>
<b>B)</b>	Minimum Required Investment Cost for Maintenance Operations on the Queen Mary.	\$ <b><u>4,853,333.00</u></b>
<b>C)</b>	Evaluation of New Use Concepts as Developed by ERA.	
(1)	Nitetime Entertainment Center	\$ <b><u>4,809,550.00</u></b>
(2)	Card Parlor Combined With Entertainment Center	\$ <b><u>4,939,550.00</u></b>
(3)	Maritime Museum on Shore with Mini-Tour	\$ <b><u>50,000.00</u></b>

**Volume III**  
**SECTION II**

*QUEEN MARY*

VESSEL ANALYSIS

INTRODUCTION  
TO  
RADOS INTERNATIONAL CORPORATION

# **RADOS INTERNATIONAL CORPORATION**

Rados International Corporation is a privately held California corporation located in its office building at 1300 South Beacon Street in San Pedro, California overlooking the Los Angeles Harbor.

The corporation, a naval architectural and marine engineering firm is the current organization under the Rados family ownership and management now in its third generation, which has been continually devoted to serving the needs of the marine industry and those of the U.S. and foreign governments. The staff and management of Rados International is dedicated to maintaining the high degree of professional excellence in all operational areas. This standard has become recognized throughout the industry as the hallmark of engineering, design and program management undertaken by Rados International.

The corporation has provided the following activities for both the domestic and international clients:

- Ship and marine structure design and engineering
- Ship and modification design and engineering
- Special ships system design and engineering
- Shipbuilding facilities design and engineering
- Ship Brokerage
- Marine Surveyor services
- Owners resident inspection services
- Scientific and computer analysis of marine structures
- Conceptual studies
- Concept study development
- Technical training in ship and shipboard systems
- Technical consulting service

Our staff of Naval Architects, marine engineers and other professional personnel are thoroughly conversant with the current rules and regulations of American Bureau of Shipping (ABS), Bureau Veritas, Germanischer Lloyd's, Det Norske Veritas, U.S. Maritime Administration (MARAD), and Lloyd's Register. We are thoroughly acquainted with U.S. Coast Guard (USCG) regulations, Safety of Life at Sea (SOLAS), and Inter-Governmental Maritime Consulting Organization (IMCO) requirements as they apply to new designs and modifications to existing vessels.

During the past years the Rados Group designed and constructed a number of vessels for the Department of the Navy, Army and Air Force as well as for the commercial industry. Major repairs and modifications were performed on all types of naval and commercial vessels.

Typical programs performed by Rados International Corporation include design engineering and construction supervision for both military and commercial industries including tankers, cargo vessels, oil drilling vessels, ocean mining vessels, pipe laying barges, cable laying vessels, oceanographic vessels, fishing vessels, passenger vessels and fire fighting boats.

Major modification projects include work on aircraft carriers, battleships, cruisers, frigates, destroyers, the HMS Queen Mary, the HMS Queen Elizabeth, the S.S. United States, Princess Cruise Lines, Cunard Cruise Lines, Admiralty Cruise Lines and Automation of Engine Rooms on various ships.

Our services have been performed in over ten different countries of the world.

During the past years, the Rados Corporations have received letters of commendation and awards from the United States Department of the Navy, Branches of the Army and Air Force; Governments of Argentina, Mexico, England, Spain and Italy, and from domestic and foreign shipping corporations for efficiency in design, construction and cost containments.

In 1967, Rados International Corporation was selected over a number of firms in the United States to provide a team of engineers to board the HMS Queen Mary in Southampton, England and travel with the vessel to New York and back to investigate and determine the condition of the vessel, its machinery and equipment. Report of findings were submitted to the City of Long Beach. Rados was subsequently selected as the Naval Architecture and Marine Engineering firm to design and develop detail construction drawings and specifications to convert the HMS Queen Mary a floating structure, into a hotel, convention center, museum, shopping area, restaurants and tour facility.

During the past years, Rados International Corporation has been awarded contracts by the Wrather Corporation and later the Disney Company to perform studies and develop detail construction drawings and provide supervision for repairs, maintenance and modifications to the structure and for new attractions aboard the Queen Mary.

Over the past 25 years, Rados International Corporation has developed its library and files of various specifications, drawings and equipment lists of both the originally designed vessel, modification drawings of her conversion in 1968-71, and subsequent space and equipment modifications undertaken.

**Volume III**  
**SECTION III**

*QUEEN MARY*

VESSEL ANALYSIS

A HISTORY OF  
THE QUEEN MARY

## **HISTORY OF THE QUEEN MARY PROGRAM**

The Queen Mary was designed and constructed by the John Brown Shipyard, Clydebank, Scotland in the year 1936. The original main characteristics of the ship were as follows:

Overall Length	1019.6 Feet
Beam	118.0 Feet
Draft	39.4 Feet
Gross Tonnage	81,23.7 Tons

The hull was designed and built in accordance with the Rules and Regulations of British Lloyds (Lloyds of London) for the highest class 100 A1. Future modifications to structural elements of the floating structure have generally conformed to the Uniform Building Code (UBC). Where ship structures are involved the elements have conformed to the Principals of Naval Architecture and Marine Engineering.

The hull structural elements (plates, shapes and rivets) were constructed using mild steel No. 28-32. This material is roughly equivalent to A-36 structural steel with a yield strength of 33 KSI (Kips per square inch). 1 Kip = 0.45 L.T.

The hull plate thickness as designed, ranges from 1.05 inches on the bottom plating, to 1.20 inches on the turn of the bilge, to 1.01 inches at the "A" Deck which forms the strength deck of the Queen Mary. The bow and stern hull plating areas vary from .72 inches to .80 inches in thickness, due to the less bending moment (stress) requirements for the hull structure. These plate thicknesses far exceed the requirements set forth by the strict Lloyd's Register of Shipping Classification Society.

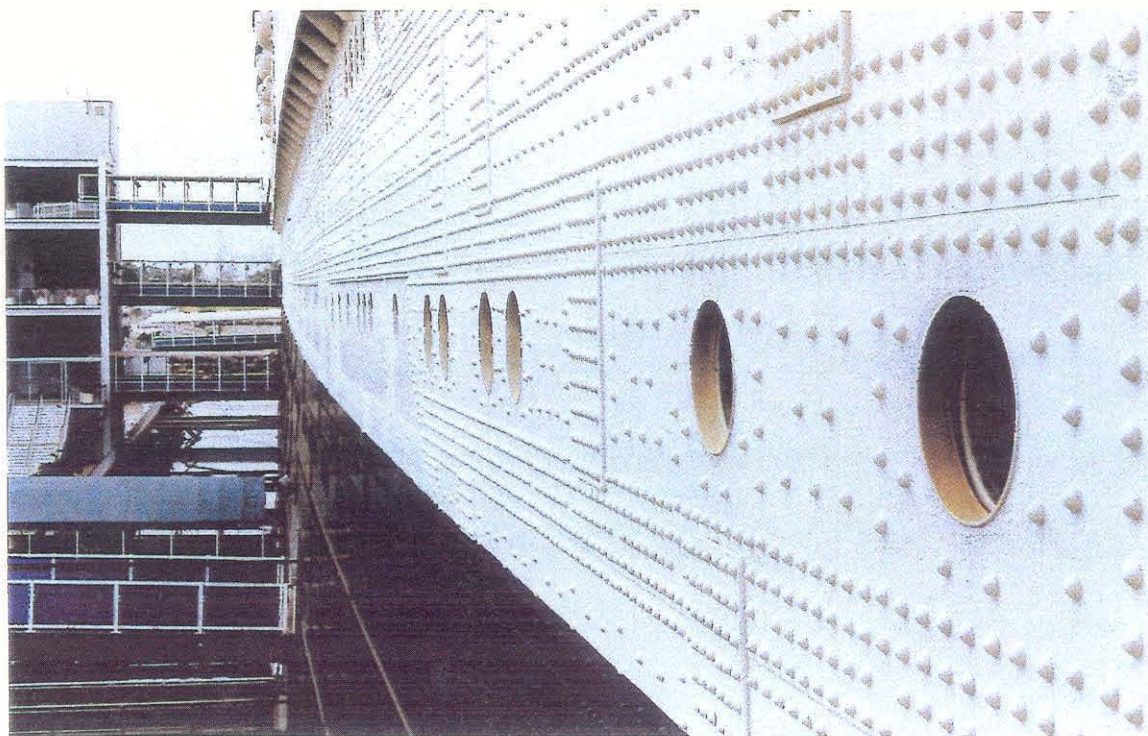
The steel frame-spacing within the ship varies from 24 inches at the bow and stern areas, to 36 inch spacing at the mid-section area of the vessel. These frames running athwartship (Port to Starboard) are .50 inches thick and have lighting holes cut out of the frames to reduce weight.

The Queen Mary was designed with thirteen (13) decks. The strength deck, namely the "A" Deck is .66 inches thick, while the other decks are .50 inches in thickness.

The hull area below the "R" Deck was subdivided into seventeen (17) watertight bulkheads with access through remote controlled watertight doors. These bulkheads and doors were constructed using .50 inch plate.

As the vessel exists today, only two originally constructed watertight bulkheads remain as initially constructed. The remaining fifteen (15) W.T. Bulkheads have been extensively modified or have had major portions of the bulkheads removed. Additionally, none of the remote controlled watertight doors initially installed in the bulkheads are operable. Most have been locked in the open position with pneumatic piping disconnected.

The hull structure of the vessel was constructed using ten million steel rivets to fasten the steel plates to the scantlings. These rivets were 1-1/8 inch in diameter and varying from 2 to 6 inches in length. The hull structure in terms of strength, far exceeds current construction methods, and is considered one of the strongest commercial passenger liners ever built.



**HULL PLATING AND RIVETING PORT SIDE**

During the construction of the Queen Mary, asbestos containing materials (ACM) were used in practically every form of marine construction providing thermal protection, insulation and fire protection to piping, interior bulkheads and compartmentation boundaries. A typical product used aboard the ship was "Turnall Asbestos Wood". This material will not burn and resists fire. This material was used in the construction of staterooms, hallways, lounges, dinning rooms, restaurants, offices, etc. ACM was used for pipe insulation as well as ducting for air and heating, and it was used as insulation and sound proofing for machinery equipment, boiler rooms, electrical wiring systems, and the like.



The ship contains 13 elevators, which were installed in 1934 to move passengers from deck to deck. These elevators were not fully automatic and do not meet state and federal requirements.

The HMS Queen Mary contained 321 first class staterooms, 347 cabin class rooms and 281 tourist class cabins, for a total of 949 staterooms for the passengers located on Main; "A" and "B" Decks. There were also staterooms for 1174 officers and crew.



**TYPICAL STATEROOM**

The ship contained three (3) separate zones for the passengers, the bow section contained the tourist class, the midship section contained the first class, and the aft section contained the cabin class. Each zone had their own cabins, dining facilities, restaurants, galleys, lounges and entertainment areas.

The HMS Queen Mary contained 27 boilers and four turbine engines producing 200,000 horsepower, thus producing a speed of 31.69 knots (37 mph).

The ship contained (24) lifeboats, each carrying 124 people. The boats contained diesel engines and supplies. The Queen Mary's illustrious career included 2,114,000 paying passengers and a total traveled distance of 3,807,277 nautical miles. she saw service as a troop carrier, hospital, and British command ship.



**Volume III**  
**SECTION IV**

*QUEEN MARY*

VESSEL ANALYSIS

AN INVESTIGATION OF  
THE QUEEN MARY  
PERFORMED SEPTEMBER 26, 1990  
(REQUESTED BY PORT OF LONG BEACH)

# **QUEEN MARY VESSEL ANALYSIS**

## **INVESTIGATION OF THE QUEEN MARY STRUCTURAL ANALYSIS STUDY**

Sometime after the conversion of the Queen Mary, which occurred during the period of 1968-71, several conditions concerning buckling of the decks appeared. After a thorough investigation and analysis of the complete structure it was determined that the primary reason for these distortions, was the removal of internal bulkheads and trunks to allow access for rip-out and removal of the ships boilers and equipment and re-installation of replacement materials and equipment. These removed structures were never reinstalled by the contractor due to proposed future developments of the lower areas. Other remaining structural members were modified to enlarge interior areas and only local strength members were replaced.

### **I. DECK BUCKLING**

#### **1. "A" Deck Frames 255 - 258 - "Restroom"**

"A" deck, frames 255 - 258, show evidence of overstress in the form of deck buckling and distortion in an area 3 feet x 5 feet on the port side of the vessel.

The buckling appears near the middle of a structural deck area (panel) between frames 255 and 261 and from the ships centerline to the inboard longitudinal system at 14'-6" starboard. Originally, this panel had support assistance from bulkheads over and under at 10'-0" off centerline. These bulkheads were removed. As a consequence, the panel size was doubled by removal of the centerline structural bulkhead. (Note: Some wooden joiner bulkheads were put back in, but provide no structural support).

The buckled "A" deck at frames 255 - 258 is located in a public restroom. Recommended repairs would be the installation of a 3", schedule 40 pipe stanchion between "A" deck and "B" deck at frame 257. Retile floor area as necessary.



**"A" DECK RESTROOM - FR. 255 - 258**

This would not impair the use of the lock shop existing on "B" deck below. A bulkhead below "B" Deck would carry out this loading.

Amount                      \$ 2,095.00

2. "B" Deck Frames 177 - 180 — "Fan Room"

"B" deck, frame 178, shows evidence of overstress in the form of deck buckling and distortion in an area about 5 feet x 5 feet in the Fan Room near centerline. This area is occupied by ship's service personnel.

This 15 foot section of decking on "B" deck separates two (2) large openings, namely the uptake truck No. 2 and the open area providing the high overhead for the Main Convention Hall. This deck was originally supported by the uptake trunk bulkheads. With the removal of the trunk, stanchions were installed to carry vertical loads, but they give little support for horizontal loads, either fore-and-aft or transverse. The horizontal loads would come from twisting motions on the ship's fendering system and some combined loads due to hogging of the vessel. Whereas sagging is the drooping of the midship portion relative to the bow and stern, hogging is the straining of the ship which makes the bow and stern lower than the midship section.

Since any stiffening or cross bracing in the middle of the Windsor room would be unacceptable, it is recommended to just keep a periodic review of the deck area. It is anticipated that the buckling and distortion will not continue, as long as no additional loads or excess hogging conditions occur, and if the present fendering system is modified to incorporate rubber fenders. We Recommend that the areas be paved over the height of the ripples on "B" deck to eliminate possible tripping hazards.

Amount                      \$ None

3. "C" Deck Frame 191 — "Passageway"

An investigation of "C" deck, at frame 191, approximately 28 feet, port side, shows evidence of overstress in the form of deck buckling and distortion. This area is approximately 2 feet x 3 feet and is located in a passageway used by the ship's tour.

The "C" deck was originally designed near the neutral-axis of the hull girder, and therefore, did not receive much stress loading from hogging and sagging of the hull. During the conversion, the "R" deck was decked-in completely and became the new "upper flange" of the hull girder.

With much of the uptake trunk structure removed, it effectively formed an expansion joint down to the "R" deck to work with the existing expansion joint at frame 180-1/2, thus relieving the Main deck as the upper flange.

Cutting away of large arches through the main longitudinal bulkheads, 14'-6" port and starboard at frames 190 - 192, has occurred for tour viewing of the Boiler Room spaces. Even though stanchions were installed to carry vertical loads, they are not effective when resisting the new hogging, torsional loads and fender loads. Recommend removing section of deck and replace with new plating.

Amount                      \$ 1,850.00

4. "D" Deck Frame 111 - "Convention/Exhibit Area"

"D" deck at frame 111 revealed that the only buckling and torsion that occurred was due to the underlayment of cement. The underside of the decking appeared to be free from undue stress and buckling. With the modification to the fendering system there should be no concern regarding deformation of "D" deck and its related structure. Repairs have been made by the ship's maintenance crew.

II. PIPING SYSTEMS - BILGE TRANSFER SYSTEM

The bilge transfer costs are included in Section 7, Mechanical and Piping System Report

**HOTEL QUEEN MARY  
VESSEL ANALYSIS**

**HULL STRUCTURE ANALYSIS**

**SUMMARY SHEET**

<u>No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Mat'l.</u>	<u>Labor</u>	<u>Immed</u>	<u>Defer</u>	<u>Total</u>
<b>I. DECK BUCKLING:</b>							
1	"A" Deck - Restroom	1	295.00	1800.00	2095.00	-----	2095.00
2	"B" Deck - Fan Room	1	-----	-----	-----	-----	None
3	"C" Deck - Passageway	1	250.00	1600.00	-----	1850.00	1850.00
4	"D" Deck - Restroom	1	-----	-----	-----	-----	None
<b>II. PIPING SYSTEMS:</b>							
See Section VII - Item 7							
			<b>TOTAL</b>		<b>2095.00</b>	<b>1850.00</b>	<b>3945.00</b>

**Volume III**  
**SECTION V**

*QUEEN MARY*

VESSEL ANALYSIS

AN INVESTIGATION OF  
THE QUEEN MARY  
EXTERIOR AND INTERIOR  
HULL PLATING STUDY  
PERFORMED DECEMBER 1990  
(REQUESTED BY PORT OF LONG BEACH)



# **QUEEN MARY VESSEL ANALYSIS**

## **AN INVESTIGATION OF THE EXTERIOR AND INTERIOR HULL STUDY PERFORMED DECEMBER 1990**

A survey was performed for the Port of Long Beach to investigate the condition of the Queen Mary, primarily in the areas of the breasting structure, propeller box, bilges and swimming pool. The following report and findings are submitted.

### **1. BREASTING STRUCTURE:**

Inspections revealed that the coating has deteriorated and disbanded and is not effectively coating the structure in the splash zone. To inhibit corrosion of the wetted surface of the structure at the waterline at various tide levels, requires corrective welding and reapplication of the corrosion resistant coating. Cathodic protection is not effective in areas such as the splash zone which are not completely submerged.



**BREASTING STRUCTURE**

**V - 1**



The Breasting Structures should be sandblasted and re-coated to inhibit future corrosion.

Amount \$ 4,425.00

2. **PROPELLER BOX:**

The propeller box has been cleaned and repaired by the Disney Company and an automatically controlled impressed current rectifier, (Cathodic Protection System) has been installed to eliminate future corrosion to the steel box structure. Chemicals are routinely added to the fresh water in the structure to minimize imbalances and abate corrosion.

Interior and exterior sections of the propeller box welding seams, are deteriorated and will require future rewelding. This will require the services of an underwater diver to clean the exterior areas and reweld. Interior areas will require the removal of water from the box, erection of staging and welding of seams.

Amount \$ 23,250.00

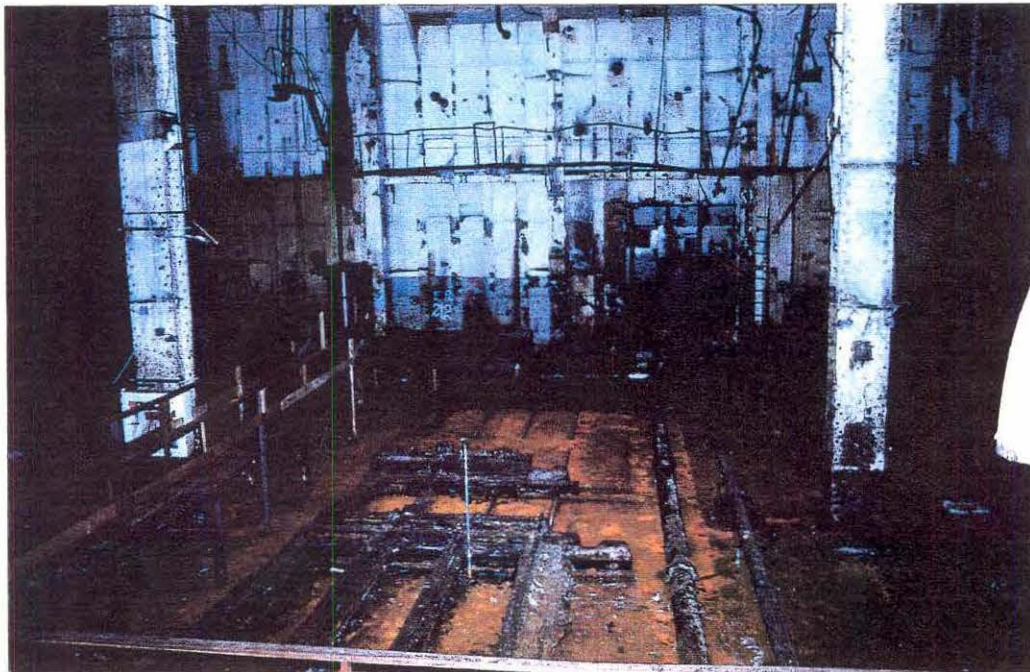


**PROPELLER BOX**

**3.-23. HULL BILGES - FRAMES 300-51 (item 13 excluded):**

The Bilge and Interior Bilge areas of the Boiler Room, Generator, Engine Room Shaft Alley, Refrigeration Room and Aft Steering Compartment were inspected in those areas that were accessible and free of Asbestos Containing Material (ACM).

The Boiler Room, Generator and forward Engine room frames 112 to 289 are contaminated with ACM and therefore, unavailable for close inspection and Audio Gauging of tank tops to determine plate thickness. During the past number of years contaminated water, trash, debris, and dissimilar metals, have laid in the bilge area causing considerable corrosive action to the tank tops and structures.



**BOILER ROOM No. 3  
AND DOUBLE BOTTOM TANK TOPS**

The contaminated water has been removed from the boiler room bilge area and visual inspections indicate considerable corrosion has occurred to tank tops and structures.





**FWD TURBO GENERATOR ROOM - BILGE**



**BOILER FOUNDATION  
AND  
ACCESS TO DOUBLE BOTTOM TANKS**



Due also to the continuous falling of ACM fibers from the overhead panels, the area is restricted for performing further studies and reports.

An immediate concern should be to remove the Asbestos Containing Materials, and sandblast and paint to further reduce deterioration of the plates and structure. As shown in the photographs, there is no watertight integrity within the respective compartments because of the removal of portions of the watertight bulkheads. Should the vessel for some reason incur a serious, fast flowing leak, damage control in limiting the compartments to be flooded would be non-existent. A serious, unmanageable leak would most likely cause the structure to sink.

The aft section of the Bilge, until recently, had also been filled with contaminated water, debris, trash and dissimilar metals which has caused extensive corrosion to the hull plating, rivets and structures. The majority of contaminated ballast water in the double bottom tanks, has been removed and drilling mud has been inserted as ballast in the double bottom tanks. Trash, debris and dissimilar metals are still present in the bilge aft, thus, a corrosive action and further deterioration of plating, rivets and structure still exists.



**BILGE DETERIORATION  
CENTERLINE / AFT**

This area also contains loose ACM.



Removal of ACM and trash from the after section of the vessel should also be initiated. Until this area is cleaned and sandblasted, readings cannot be taken in the critical areas. The areas above the contaminated bilges indicate a corrosion loss of approximately 15 %.

ACM Removal	\$ <u>780,000.00</u>
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Clean, Sandblast & Paint	\$ <u>1,950,000.00</u>
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TOTAL	\$ <u>2,730,000.00</u>
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### 13. INDOOR SWIMMING POOL:

The Pool is of rectangular shape, 35 feet long and 22 feet wide. The depth varies from 7 feet to 8 feet, 6 inches. The capacity of salt water used in the pool is about 29,000 gallons with a weight of approximately 109 long tons.

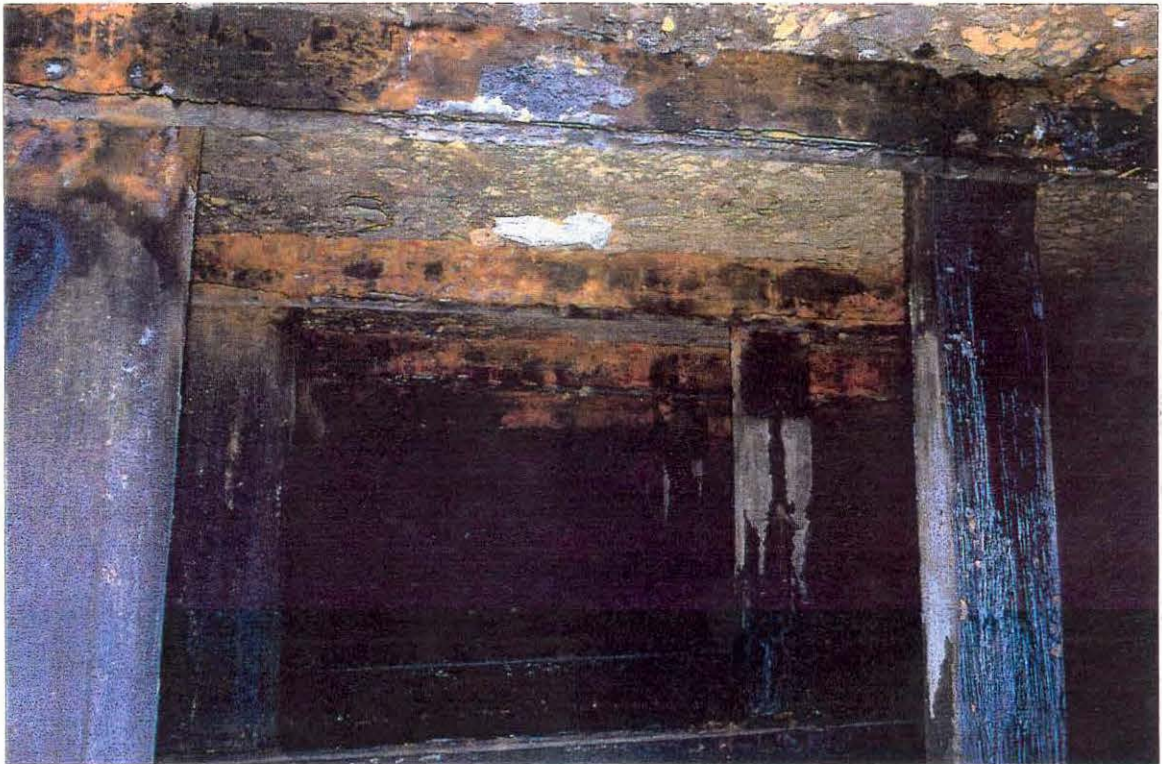
The pool is located between "C" and "D" Deck between frames 212 to 222 at the centerline of the structure. The top of the pool and exposed structures on or above are covered with decorated tiles about one inch thick. Severe cracking and deformation of the tiles and concrete underlayment occur when the pool is filled with water.



**1<sup>ST</sup> CLASS SWIMMING POOL**



Investigations of the Pool Complex revealed that due to the number of years of continuously using salt water in the pool combined with the heat generated by operation of the generators below, and the moisture trapped in the enclosed structure beneath the pool, the steel lining and structural members of the cofferdam of the pool have severely deteriorated. Should the pool be considered operational at some future time, expensive repairs would be required. Additionally several supporting structures on the port side of the pool structure were removed during the conversion to accommodate the application of cement on the floor of "D" deck. This removed structural support, adds significantly to the movement of the pool and has created the cracks to the pool cement and tile. This movement appears to be most prevalent when the pool is filled.



**STRUCTURAL FOUNDATION  
UNDER 1<sup>ST</sup> CLASS POOL**

A structural analysis of this area is required to establish the requirements for installation of transverse bulkhead structures deemed necessary.

The Ultrasonic Thickness Measurements for the Swimming Pool Area are:

<u>Area Thickness</u>			
<u>Location</u>	<u>Max</u>	<u>Min</u>	<u>Average</u>
Port Side	0.440	0.070	0.317
Bow Side	0.450	0.375	0.380
Starboard Side	0.370	0.055	0.178
Lower Plate	0.475	0.050	0.366

The minimum thickness readings are from isolated locations,  
around the pool structure.

Amount	\$ <u>225,000.00</u>
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# QUEEN MARY VESSEL ANALYSIS

## HULL STRUCTURE ANALYSIS

### SUMMARY SHEET

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Mat'l</u>	<u>Labor</u>	<u>Immed</u>	<u>Defer</u>	<u>Total</u>
1.	Breasting structure	2	1,500.00	2,925.00	4,425.00	-----	4,425.00
2.	Propeller Box	1	4,500.00	18,750.00	-----	23,250.00	23,250.00
3.	Internal bilges Frame 300-51	1	630,000.00	2,100,000.00	2,730,000.00	-----	2,730,000.00
4.	Swimming pool	1	65,000.00	200,000.00	-----	265,000.00	265,000.00
				<b>TOTAL</b>	<b>2,734,425.00</b>	<b>288,250.00</b>	<b>3,022,675.00</b>



**Volume III**  
**SECTION VI**

*QUEEN MARY*

VESSEL ANALYSIS

CURRENT  
HULL ANALYSIS  
AND  
REPORT OF FINDINGS

# **QUEEN MARY VESSEL ANALYSIS**

## **CURRENT HULL ANALYSIS AND REPORT OF FINDINGS**

The Hull Structure of the Queen Mary was investigated for purposes of determining the Projected Cost Estimated (PCE) to bring the hull structure up to industry standards. No shore facilities or functions were studied with the exception of mooring lines, gangways and breasting structures.

The hull characteristics of the Hotel Queen Mary since the conversion during the period of 1968-1971 are as follows:

Draft	34.5	Feet
Ship Weight	44,225	Long Tons
Liquid and Ballast	22,501	Long Tons
Total Displacement	66,726	Long Tons

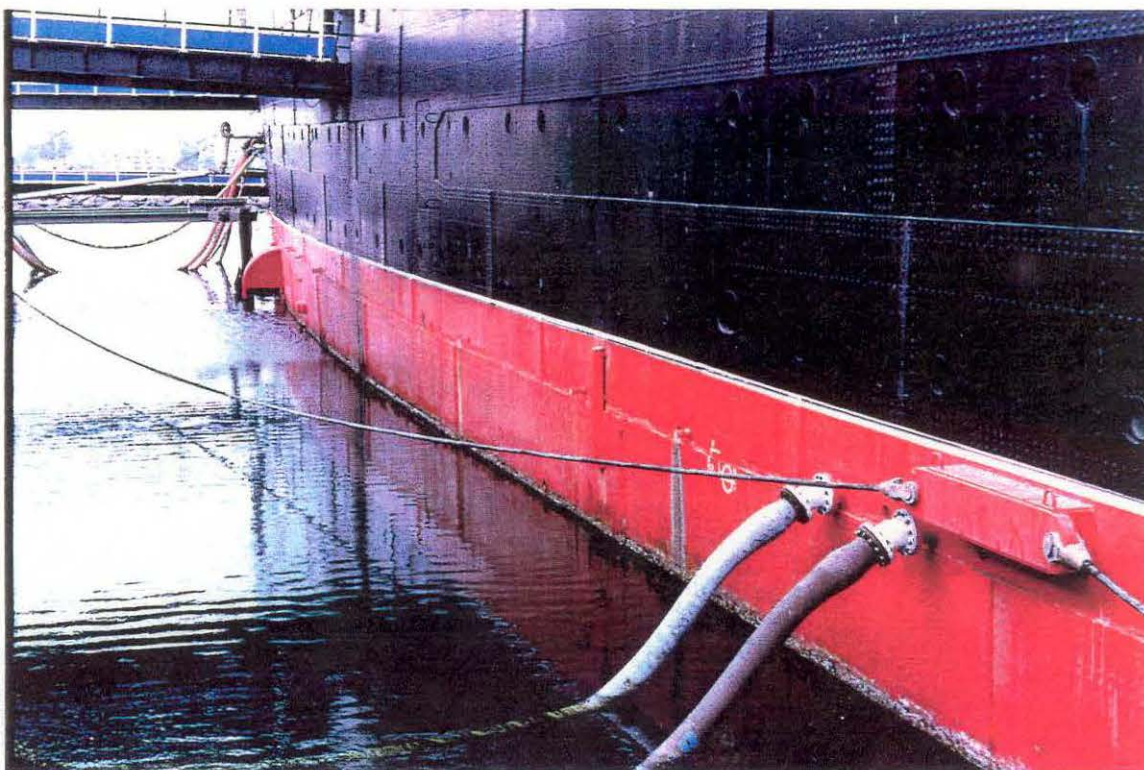
The exterior underwater hull plating (150,000 square feet) and rivets were not inspected by underwater divers due to time restraints and cost restriction.

### **HULL STRUCTURE**

#### **1. A. Hull Exterior - Below Waterline (Drydocking)**

During the conversion period of the Queen Mary, Rados developed a "Hull Corrosion Study" for the Long Beach Queen Mary Department for purposes of determining theoretically the projected amount of plate wastage (deterioration) that would occur during the life of the vessel. The conclusion of the study revealed that within a period of twenty-five (25) years the Queen should be re-drydocked to inspect and repair deteriorated plating, rivets, and plate inserts that have covered the one-hundred (100) sea chest openings. The hull structure should be cleaned, sandblasted, and painted within the next 3 to 5 years.

This "Corrosion Study" took into consideration the cathodic protection system (impressed current) presently existing aboard the Queen Mary which consists essentially of ten (10) rectifiers of which five (5) rectifiers are utilized for protection of ships hull.



**HULL CORROSION - SPLASH ZONE**

In order to drydock the Queen Mary, a portion of the rock dike has to be removed and then again reinstalled along with gangways, connections and mooring lines, etc.

Remove and Reinstall Rock Dike, Gangways, etc.	\$ <u>2,360,000.00</u>
Drydock & Sandblast, Repairs & Paint	\$ <u>3,900,000.00</u>
Amount	\$ <u>6,200,000.00</u>

**B. Hull Exterior - Above Waterline**

The exterior are of the Queen Mary will require painting within a period of 1 to 2 years in order to control the rust and deterioration of structure. Staging will be required to paint sides, superstructure, funnels and mast.

Amount	\$ <u>650,000.00</u>
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### **C. Hull Interior - Bilge Area**

After asbestos containing material is removed from tank tops and bilge areas, cut and remove rusted and deteriorated former boiler foundations. Sandblast and clean area and repair as necessary. Paint total area of bilge up to "D"-Deck and up to "F"-Deck where shell is enclosed. Painting is to include framing, bulkheads, tank facing and interconnected steel work including underside of decks.

Amount

\$ See Section V Item 3

## **2. WATERTIGHT BULKHEADS:**

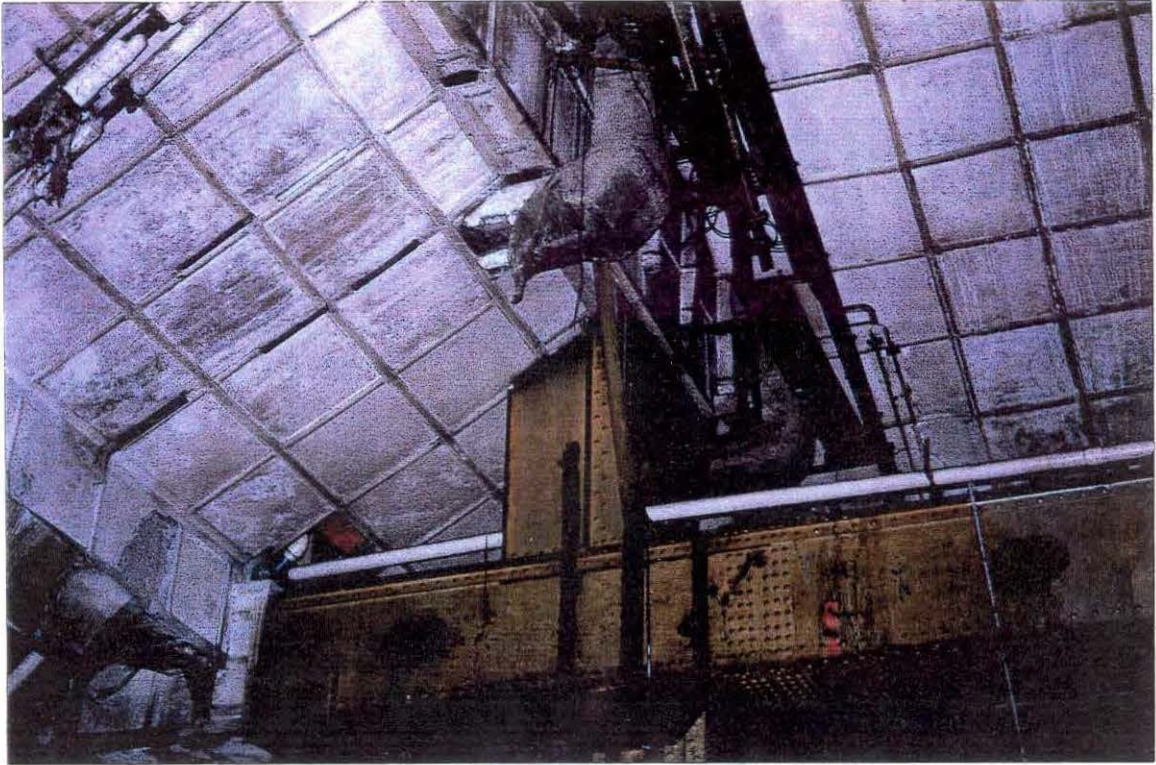
The Queen Mary was designed and constructed with eighteen (18) watertight bulkheads from the double bottom tanks (tank top) to the "F"-Deck forward (approximately 35 feet high) and "G-Deck Aft (approximately 20 feet high). These structural bulkheads were constructed from .50 inch plate with seven (7) 4'-6" x 18-1/2" I-beams and thirty-five (35) 10" x 7" x 1/2" I-beams spaced in between for stiffeners per bulkhead.

Due to the removal of boilers, generators and machinery during the 1968-71 conversion period, the majority of bulkheads were partially removed to allow space for removal and re-installation of materials and equipment. They were not replaced for structural strength or watertight integrity for reasons of future development of those areas. Presently there exists extensive corrosion to the bulkheads where they come into contact with the contaminated bilges.

As previously mentioned, the Queen Mary has no watertight integrity as required by regulatory bodies for a floating structure. If a certain hull plate or plates became defective and water leaked into the structure it could not be contained due to the present status of the non-watertight bulkheads and therefore the water would flood the whole structure and very probably sink. This major concern is perhaps the most serious condition aboard the ship from a naval architecture point of view.

Presently, the majority of the tank top areas are covered with Asbestos Containing Material (ACM). This is due to the ACM panels that were installed in the uptakes (stack area) to provide for heat retention within the machinery spaces and avoid penetration into the staterooms and other areas. This hazardous material would be required to be removed by a qualified firm prior to any work is preformed in these areas.





### ACM PANELS - UPTAKE

To repair and replace watertight bulkheads only small sections of steel can be used due to limited openings in the hull structure. Extensive amounts of staging would be required to handle and erect the following watertight bulkheads.

Watertight bulkhead 21 is forward of the propeller shaft tunnel. This area appears to have heavy corrosion due to contaminated water, trash and dissimilar metals laying in bilge area. This bulkhead is penetrated by pipes and ducts. The penetration should be blanked-off and four (4) watertight doors installed for watertight integrity.

Watertight bulkhead 87 has a large opening that requires plate replacement and stiffeners. Miscellaneous penetrations are to be blanked-off and two (2) watertight doors installed.

Watertight bulkhead 112 is partially watertight up to the twelve (12) foot flat. Steel plate and stiffeners are to be installed up to the "F"-Deck for watertight integrity. Penetrations to be blanked-off and two (2) watertight doors installed.

Watertight bulkhead 168 has four (4) large open areas at the 11-foot flat that requires re-plating and installation of stiffeners. Piping runs and ventilation duct openings require closures to make watertight. Install one (1) watertight door.

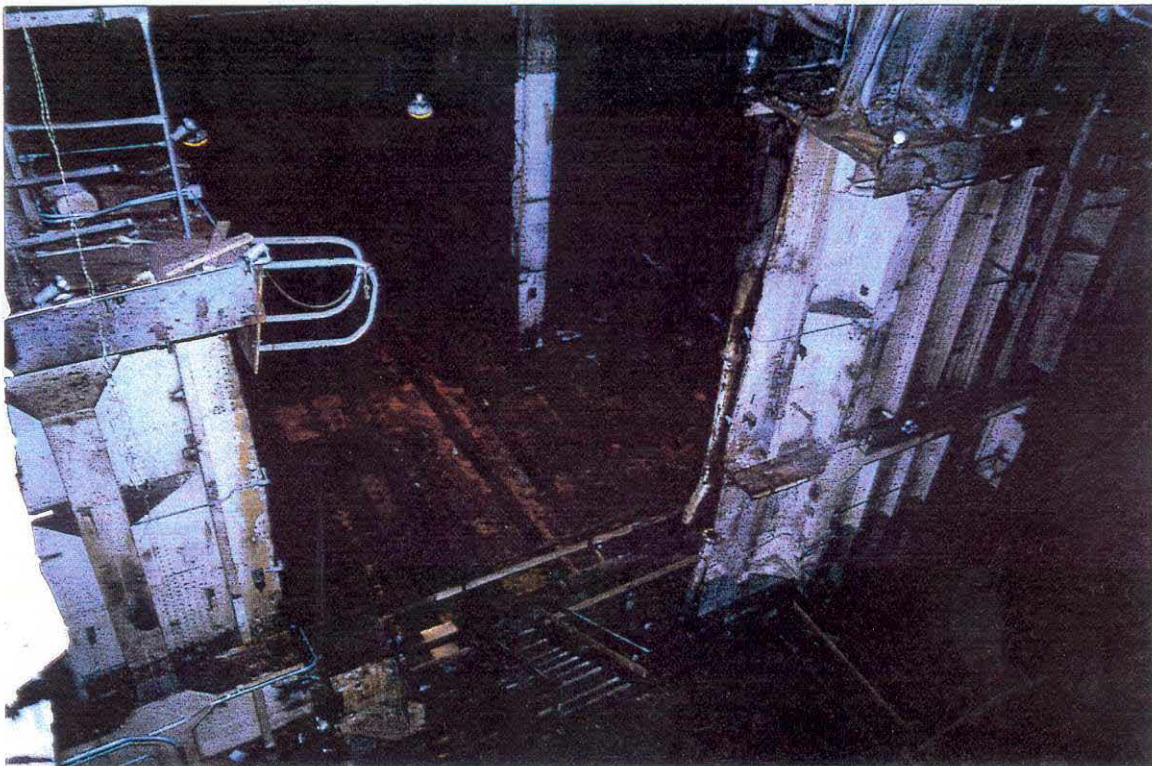


Watertight bulkhead 222 is partially watertight up to the "D"-Deck. Several penetrations are to be blanked-off and collars around bilge pipes and a watertight door is to be installed.

Watertight bulkheads 260 & 311 requires major replacement of plating and stiffeners to "F"-Deck. Installation of a watertight door is required and penetrations blanked-off.

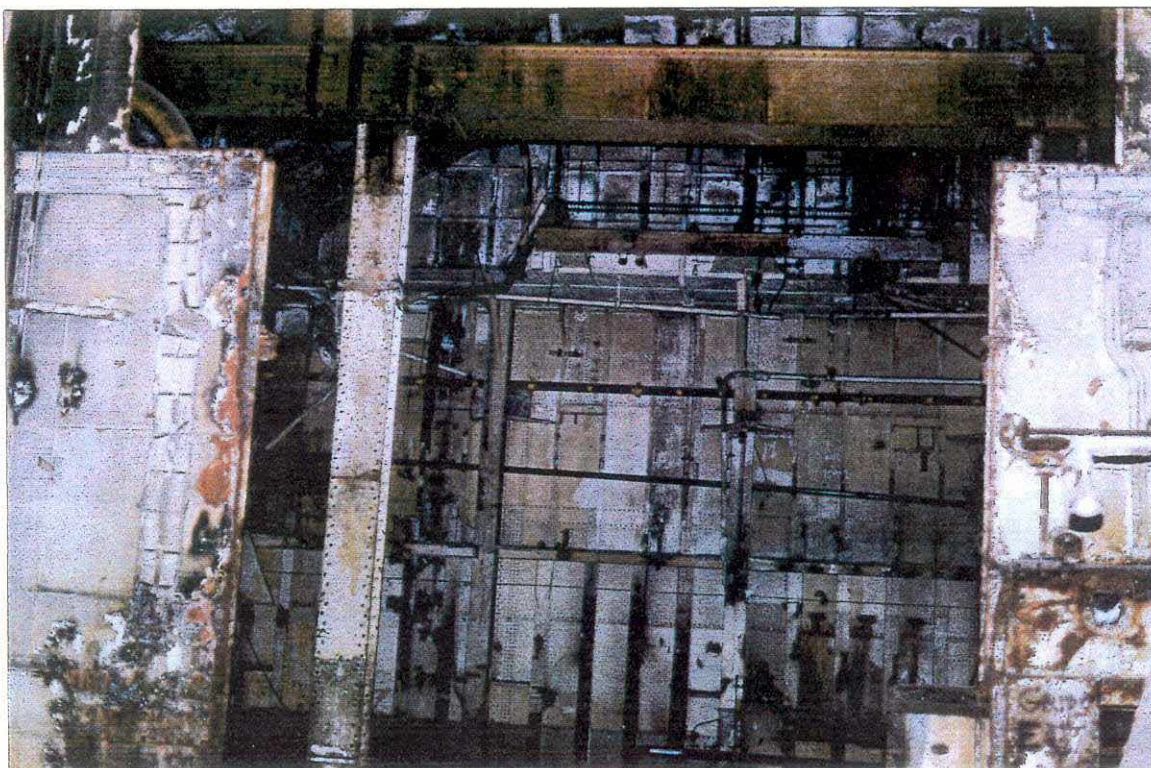
Of the seventeen (17) watertight structural bulkheads in the lower portion of the ship, only two (2) were not modified as a consequence of the conversion modifications. Of the fifteen (15) that were modified, bulkheads 51, 112, 136, 168, 222 and 260 should be repaired/replaced to insure watertight integrity.

Amount      \$ 1,890,500.00



**BULKHEAD 190  
TYPICAL CONVERSION MODIFICATION  
TO WATERTIGHT BULKHEAD**





**REMOVED SECTION  
WATERTIGHT BULKHEAD 244  
LOOKING AFT TO BOILER ROOM No. 2**

**3. EXTERIOR DECKS:**

**A. REPAIR AND REFINISH**

The exterior teak wood decks that have been exposed to the water and weather conditions during the past fifty-six years, have weathered considerably, and caused seepage of moisture through the seams and plugs. This leakage has caused corrosion to the steel decks underneath the wood decking. Even though some of the deteriorated wood has been replaced, it has been reported that leaks appear in compartments below. It is recommended that the balance of the deteriorated teak decks be repaired by removing and replacing of plugs and seam compound and refinishing of the 153,000 square feet of decking.

Amount                      \$ 710,000.00



**B. REMOVE AND REPLACE:**

1) It is the opinion of the team of engineers that within the next 3 to 5 years the teak-wood decking would be required to be removed and sections of the steel deck plating beneath, be repaired or replaced to eliminate leakage of water into compartments below.

Amount

\$ 2,950,000.00



**SECTION OF REMOVED TEAK DECK  
SHOWING CORRODED STEEL DECK PLATING**





**SPORTS DECK - WEATHERED TEAK DECK**

2) An option to the removal of teak decking and the replacement of sections of the steel plating underneath, is the installation of new teak decking over the existing decks. This method includes the installation of one (1) inch thick teak decking fastened to the existing decks, fastening holes plugged, and caulking of all seams with weatherproof caulking.

Amount                      \$ 1,200,000.00

**C. REPAIRS TO "R" DECK:**

All interior decks have been inspected and are (with the exception of a section of the Galley "R" Deck), in sound and good condition with minimum appearance of corrosion. Vinyl floor tile that exists throughout the decking of the Queen Mary contains Asbestos Material and should be replaced with Non-Asbestos Contained Material. The section of the Galley Deck which has deteriorated, requires replacement due to corrosion from water and electrolysis.

Amount                      \$ 25,000.00

The Ultrasonic Thickness Measurements for the various steel decks are as follows:

**Area Thickness**

<u>Deck</u>	<u>Max</u>	<u>Min</u>	<u>Average</u>
"R"	0.400	0.065	0.250
Sun	0.400	0.075	0.235
Promenade	0.400	0.055	0.267
Main	0.405	0.060	0.385
"A"	0.505	0.475	0.490

The minimum thickness readings are from isolated locations on respective decks.

**4. HULL STRUCTURE EXPANSION JOINTS**

The initial design of the Queen Mary incorporated three (3) expansion joints spaced throughout the length of the ship, to absorb the impact and movement of the ships decks and structures from the motions of heavy seas. These three (3) expansion joints running from port to starboard were installed at frame 145 1/2 on the Sun Deck, frame 180 1/2 on the Sun Deck and frame 228 1/2 on the Sports Deck/Sun Deck. Due to corrosion of the steel trough on the underside of the deck joint, water is leaking into the ballrooms and lower compartments.

It is recommended that the deck cover plates be removed, to sandblast and repair the interior of the steel troughs. New overboard discharge lines to be installed and the cover plates reinstalled.

Amount                      \$ **150,000.00**

**5. ELEVATORS AND ESCALATOR**

It is recommended that the machinery and electrical equipment from seven (7) non-operating elevators be disassembled and removed and replaced with updated components to make fully automated.

The shaft areas of the elevators are coated with Asbestos Containing Material.



This ACM will be required to be removed prior to any performance of work.

One (1) escalator in the convention area has a defective gear box and requires repairs and replacement of parts.

Amount **\$ 1,925,000.00**

**6. ASBESTOS CONTAINING MATERIAL (ACM)**

An investigation of available information, specifications and plans, and an inspection of the Queen Mary structures was made to determine an approximate extent of Asbestos Containing Material presently existing aboard the vessel.

The following materials and areas contain ACM:

**Wood Paneling:**

In the construction of the Queen Mary in 1936, the Turner Asbestos Cement Company developed a new fireproof panel called "Turnall Composite Board". This panel consists of a plywood layer, a middle layer of asbestos sheet, and a back layer of plywood. A decorative wood panel was applied over the Turnall Board. All the paneling in staterooms, hallways, lounges, restaurants, etc. contain asbestos containing material.



**TYPICAL PANELING SECTION  
PROMENADE DECK, PORT SIDE**





**TYPICAL ASBESTOS INSULATION  
INSIDE WOOD PANELING**

**Ceiling and Wall Insulation:**

Turner Asbestos Cement Company also supplied a "Turnall" asbestos reinforced aluminum foil. This was used to keep temperature fluctuations to a minimum in the center of the structure where boiler up-takes rose through the stacks. There exists unconcealed ACM in the overhead of the boiler rooms, 4" thick spongy blue material sandwiched between steel decks and outer metal or transit coverings.

**Spray-On:**

Spray-on thermal insulation was found in several locations throughout the structure. This material is on fire walls, bulkheads, elevator shafts, support beams, bulkhead penetrations, pipe runs, electrical load centers and on ventilation ducts.

**Engine Room:**

Machinery, equipment, exhaust lines, pipes, and ducting contain Asbestos Containing Material the purposes of reducing temperatures in the engine room areas.



### Electrical Wire Wrap:

The older electrical wires originally installed, have an asbestos containing white cloth-like wrap. Abandoned wrapped wires can be found in wooden or metal raceways throughout the ship.

### Vinyl Floor Tile:

Vinyl floor tile is located in various areas such as lobbies, bathrooms, locker rooms, hallways and kitchens. This floor tile contains asbestos material.

### Boiler Rooms:

Presently the 46,000 square foot area in the forward boiler and generator rooms has been closed to the public due to exposure of hazardous materials. It is also closed to the crew except for situations which provide for the wearing of proper apparel.

Substantial amounts of asbestos containing material will be required to be removed from the structure both in the overhead panels as well as from the bilge areas, for continued operation of the Queen Mary and for any modification to the structure complex.

*(Note: This item is covered in Section V, item 3)*



**TYPICAL PIPE LAGGING  
"C" DECK WORKSHOP, PORT SIDE  
VI - 12**

As a result of needed repairs performed on a continual basis to specific areas of the structure and systems, ACM will be required to be removed in those areas.

Requirements of regulatory bodies specify that ACM does not need to be removed in those areas that are left undisturbed, and those where ACM is contained and no airborne particles are present.

Amount                      \$ 2,000,000.00

**7.     Handicap Accessibility**

An inspection of the Hotel Queen Mary revealed a low level of handicap accessibility to most public spaces. Any future modifications to the structure will be required to be in full compliance with the State Building Code for handicap accessibility.

Amount                      \$ 25,000.00

**8.     Occupant Egress**

Signage is to be installed in all passage ways and stairwells to inform occupants of escape routes in case of emergency.

Amount                      \$ 20,000.00

**9.     Pest Control**

Fabricate and install approximately 500 port light, (port-hole) screens to eliminate birds from entering.

Amount                      \$ 8,500.00

**10    Mooring Lines**

The inspection of mooring lines indicate a majority of the wire cables require replacement due to corrosion from the saltwater atmosphere. Investigation of all pad eyes and fittings for repairs and replacement, to be performed.

Amount                      \$ 48,000.00

**11    Life Boats**

Repair of the twenty two (22) steel life boats, replace sections of deteriorated bottoms and repaint.

Amount                    \$ 100,000.00

**QUEEN MARY  
VESSEL ANALYSIS**

**HULL ANALYSIS**

**SUMMARY SHEET**

<b>No.</b>	<b>Description</b>	<b>Qty</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Immed</b>	<b>Defer</b>	<b>Total</b>
1.	Hull Exterior (Drydock)						
	A Below waterline					6,200,000.	6,200,000.
	B Above waterline					650,000.	650,000.
	C Bilge areas						SECTION V
2.	Watertight Bulkheads		200,000.	1,690,000.	1,890,500.	-----	1,890,500.
3.	Exterior Deck						
	A Repair & Refinish		150,000.	560,000.		710,000.	710,000.
	B. Remove & Replace		1,400,000.	1,550,000.		2,950,000.	2,950,000.
	C. "R" Deck Repair		5,000.	20,000.		25,000.	25,000.
4.	Hull Expansion Joints		25,000.	125,000.		150,000.	150,000.
5.	Elevators and Escalator					1,925,000.	1,925,000.
6.	Asbestos Containing Material					2,000,000.	2,000,000.
7.	Handicap Accessibility				25,000.		25,000.
8.	Occupant Egress				20,000.		20,000.
9.	Pest Control					8,500.	8,500.
10.	Mooring Lines					48,000.	48,000.
11.	Life Boats					100,000.	100,000.
				<b>TOTAL</b>	<b>1,935,500.</b>	<b>14,766,500.</b>	<b>16,702,000.</b>



**Volume III**  
**SECTION VII**

*QUEEN MARY*

VESSEL ANALYSIS

CURRENT  
MECHANICAL AND PIPING SYSTEMS  
REPORT OF FINDINGS

# **QUEEN MARY VESSEL ANALYSIS**

## **MECHANICAL AND PIPING SYSTEM**

### **INTRODUCTION**

The Mechanical Systems aboard the Queen Mary were designed by the John Brown Shipyard and installed primarily in the year 1934. During the year of 1967, Rados Engineers boarded the vessel during its second to the last Trans Atlantic Crossing for purposes of determining the condition of the Mechanical Systems. It was determined that the Machinery, Boilers, Air Conditioning Units, Sewage and Piping Systems were severely fatigued and deteriorated, and could not withstand the rigorous requirements of incorporating a Hotel, Restaurant, and Museum for the succeeding Thirty (30) year period.

During the conversion engineering of the Queen Mary in 1967, the Air Conditioning/Refrigeration System was re-designed to ultimately service all the spaces on board the ship. A central chill water plant which has the capacity of 2700 tons of cooling is supplied through sixteen-inch chill-water-mains to the ship. The chilled water is supplied from a Central Plant located on land at Pier J and then piped aboard the Queen Mary.

The Steam System is also supplied from the land based Central Plant at Pier J. The system contains 2 - 800 HP water tube boilers capable of producing 27,500 pounds per hour of 150 lb steam.

The Sewage System consists of a 250 cubic foot collection tank serviced by two 5000 gpm sewage pumps, and a 160 cubic foot collection tank serviced by two (2), 200 gpm sewage pumps. PVC pipe has been installed aboard the Queen Mary to replace defective sewage piping. The raw sewage is piped overboard into the City sewer system.

A new Firemain System and Sprinkler Heads were installed during the conversion of the vessel to withstand City pressure requirements.

The Gas Line installed to service the galley's and other special requirements aboard the ship, also originates from city gas lines.

## **I. Mechanical & Piping Systems**

Since the installation of the mechanical and piping systems in 1968-1971 a minimum of maintenance has been performed on the equipment and piping systems. The equipment and majority of systems after being in operation for the past twenty two years will require major repairs or replacement of equipment and systems. The following information is submitted on the various mechanical and piping systems.

### **A. Central Chill-Water Plant and Steam Plant.**

The central on-shore energy plant has been designed to provide 2700 tons of refrigeration to the Q.M./Spruce Goose complex as mentioned in the introduction, in addition to a co-generation plant located near the ITS container facility, which is capable of producing 500 tons of refrigeration to the Spruce Goose dome. The 2700 ton capacity plant is provided by three (3) 800 ton units and one (1) 325 ton unit.

According to figures provided by the current tenant, Disney, the maximum refrigeration load during peak periods has been approximately 800 tons, thus only one of the 800 ton units is needed at any one time to provide for the demand and the rest of the units are on stand-by. Alternating the 800 ton units periodically will provide even wear and tear, and also keeps all units in service.

Steam supply to the Queen Mary is provided by two (2) 800 H.P. water tube boilers located at the central plant with a capacity of 27,500 #/STM/HR @ 150 PSI.

In summary, the central energy plant is more than adequate and in good condition.

### **B. Heating, Ventilation and Air Conditioning - Existing Repairs**

Due to the limited time frame available, the mechanical survey of shipboard HVAC equipment consisted of a search and review of as-built drawings and diagrams, operating procedures, and a spot-check examination of the supply and exhaust fans, air handling units, fan coil units, chilled water cooling coils, steam heating coils and their associated components.



## HEATING, VENTILATION AND AIR CONDITIONING DUCTING AND COMPONENTS

The approximate total of units presently installed on board the Queen Mary are as follows: (some are disconnected and/or not used).

- a. Air Handlers = 33
- b. Fan Coil Units = 24
- c. Supply Fans = 75
- d. Exhaust Fans = 74

Due to the age of the equipment and the limited maintenance schedule, the following conditions prevail on an average basis, and are typical for the majority of the 206 HVAC Systems.

### 1. Air Handlers

- a. Excessive corrosion exists around the unit casing and cooling coils (especially units exposed to the weather).
- b. Condensate drain pans are corroded and some plugged not allowing proper drainage.
- c. Flexible duct connectors have perforations and holes, and in some cases are torn or in a deteriorated condition.



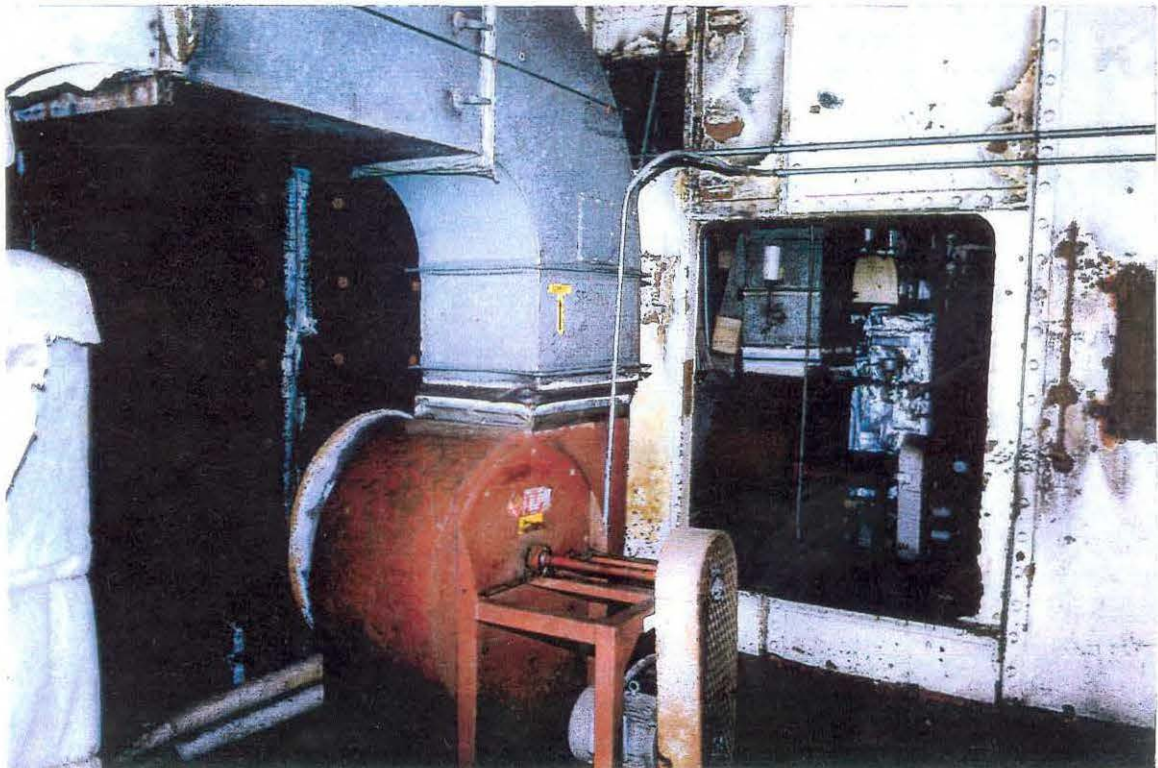
- d. Air filters and cooling coil fins are excessively dirty. This greatly reduces air flow.
- e. Chilled water piping at many units have missing and/or deteriorated thermal insulation, decreasing efficiency.

2. Fan Coil Units

- a. Air filters and cooling coils are excessively dirty. In a few units the air filters are missing.
- b. Condensate drain pans are corroding and some are plugged not allowing drainage.
- c. Chilled water piping at many units have missing and/or deteriorated thermal insulation.

3. Supply Fans

- a. Intake screens are very dirty and in some cases 60% or more clogged with dirt and/or paint which severely restricts the air flow and efficiency.
- b. Systems that have heating and/or cooling coils have clogged or missing air filters.
- c. Flexible rubberized canvas duct connectors have holes, and in some cases are torn or in a deteriorated condition.
- d. Noisy bearings and out of balance fan wheels cause excessive vibration.



**SUPPLY FAN AT FRAME 178**

#### 4. Exhaust Fans

- a. Fans installed in weather locations show a lot of corrosion and a need for general clean up maintenance.
- b. Flexible rubberized canvas duct connectors have holes, and in some cases are torn or in a deteriorated condition.
- c. Noisy bearings and out of balance fan wheels cause excessive vibration.
- d. Most of the exhaust fans installed in the weather, discharge vertically with no rain protection. Recommend installing goosenecks in these locations.

#### 5. System Upgrade

To upgrade air conditioning for existing Hotel spaces a total of (18) new Fan Coil Units and their associated piping are to be installed in the following locations:

- a. Royal State Rooms  
M-121, M-125, M-131, M-135, M-139 and M-141
- b. Mini Suites  
A-007, A-008, A-125, B-317, B-318, B-424, B-4425,  
M-017 and M-018
- c. Suites  
M-102, M-104 and M-106

Amount (1 Thru 5):      \$ 726,200.00

#### C. Heating, Ventilation and Air Conditioning - System Replacement

Due to the age of the equipment and limited maintenance performed, a scheduled replacement of the air handlers, fan coil units, supply fans, and exhaust fans should be undertaken within the next 3 to 5 years.

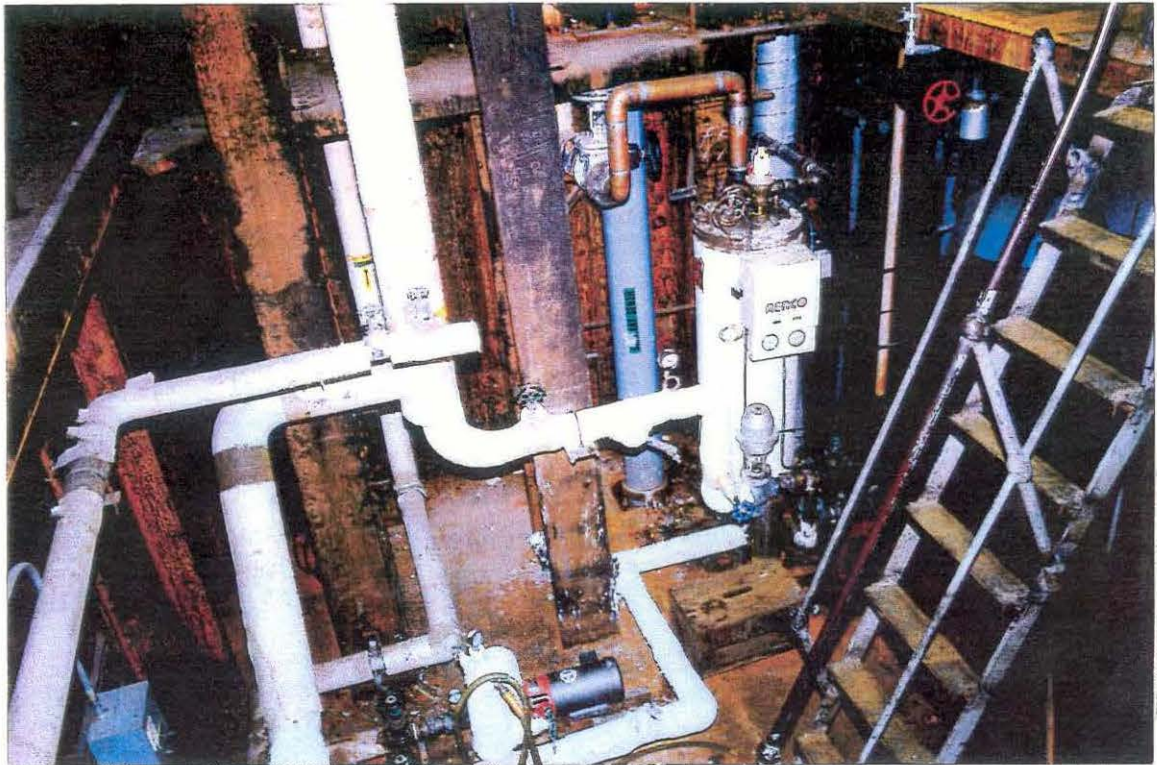
Amount                      \$ 2,450,000.00

#### D. Sewage System

The Ships Sewage is collected throughout the Ship and led to three collection tanks, two located on "F" Deck, Port and Starboard. Each has a capacity of 1870 gallons (250 cu. ft.). Two 500 gpm sewage pumps service each of these tanks. The



third tank is located on "G" Deck at frame 65 centerline and has a capacity of 1197 gallons (160 cu. ft.). This tank is serviced by two 200 gpm pumps which discharge to the Long Beach City sewer system.



**SEWAGE SYSTEM  
"F" DECK, PORT SIDE**

a) Pumps

Pumps appear to be in good condition, and this is borne out by maintenance personnel. Due to the length of time in use, pumps should be overhauled completely to avoid future problems.

b) Valves

Some sewage system valves show signs of past leaks, others were leaking at the time of inspection, although not seriously. All valves in this system should be refurbished with new gaskets, seats, etc.

c) Piping

Piping seems to be generally in good condition with a few leaks noted. Some PVC pipe has been replaced with copper pipe. Piping is not



adequately supported by pipe brackets in some areas, particularly in the sewage tank room.

Amount                      \$ 223,000.00

#### E. Steam System

Steam is supplied to the vessel from two 800 H.P. boilers located in the central energy plant on shore for comfort heating, water heating and some cooking equipment.



**PENETRATION POINT  
FOR MAIN STEAM LINE ENTERING SHIP**

##### a) Valves

A large portion of the valves throughout the steam system have either leaks through the bonnet or flanges and have deteriorating or missing insulation. Some valves are "frozen". Balancing valves are generally in poor shape and should be either repaired and calibrated or replaced and calibrated. All valves should be checked for proper operation. Pneumatic valve control tubing should be tested, pressures verified and gages calibrated then re-installed.



b) Piping

Steam lines not exposed cannot be assessed for wear without removing insulation, but many sections have insulation missing, exposing leaks and extremely corroded conditions. These conditions occur throughout the ship and in various sizes.

Amount                      \$ 150,000.00

F. Firemain System

The Firemain and Sprinkler Systems are served from the shore by separate lines. Both systems after many years of use, should be flushed and hydrostatically pressure tested in their entirety plus perform any other test required by the Long Beach Fire Department. Results of these tests will help determine the condition of the systems and the extent of repairs to be made. Should these tests indicate extensive rework, replacement of all piping may be more cost effective for the long term.



**FIREMAIN AND SPRINKLING MAIN  
AT POINT OF HULL PENETRATION**

There is presently at least 40 feet of firemain which has developed leaks. This is an indication that further problems will arise in the future, due to the deterioration of the piping.

a) Sprinkler System

Some of the sprinkler heads (approximately 20 percent) are damaged to some extent, and must be replaced. All valves should be checked for leakage and proper operation.

Amount                      \$ 475,000.00

b) Replace Firemain System

Due to the age of firemain system and the appearance of water leaks, it is recommended that the firemain be replaced during the next 3 to 5 years. Since the firemain piping penetrates asbestos containing materials, a qualified ACM firm will be required to remove hazardous materials from overhead and side partitions.

Amount                      \$ 1,950,000.00

G. Gas Line

The natural gas line serving the Q.M. at present seems to be generally in good condition, but there are some portions on the tower which should be checked by the Gas Company which services the facility.

Amount                      \$ 5,000.00

H. Water (Hot/Cold) System

Water is supplied to the vessel from shore via two (2) 6" hoses at "C" Deck. These hoses appear to be in good condition except for an accumulation of marine growth. The hoses should be cleaned and their condition assessed to determine if replacement should be made. A set of spare umbilicals should be made up as specified in part 8 of this report, so that in case of emergency, down time is minimal.

Hot water is served by two Aerco instantaneous water heaters using steam as the heating medium. The piping in the heater spaces appears to be in good condition except for some insulation missing which was being repaired at the time inspection was made.



Water piping is in fair to good condition, but requires a pressure test to locate leaks and defective piping. Control valves not operating properly should be overhauled or replaced. Insulation is missing on some hot water piping.

Amount                      \$ 202,000.00

#### I. Bilge System

The Bilge System, consisting of a main line which runs Fore and Aft with branch lines to various areas of the bilges, is served by three (3) pumps, one (1) forward and one (1) amidship, both on the Port side of the vessel, and one (1) Aft on the Starboard side of the vessel. Two emergency diesel pumps are also located on the ship about "G" Deck level, however only one is connected.



**BILGE PIPING WITH BRANCH LINES TO SUMPS**

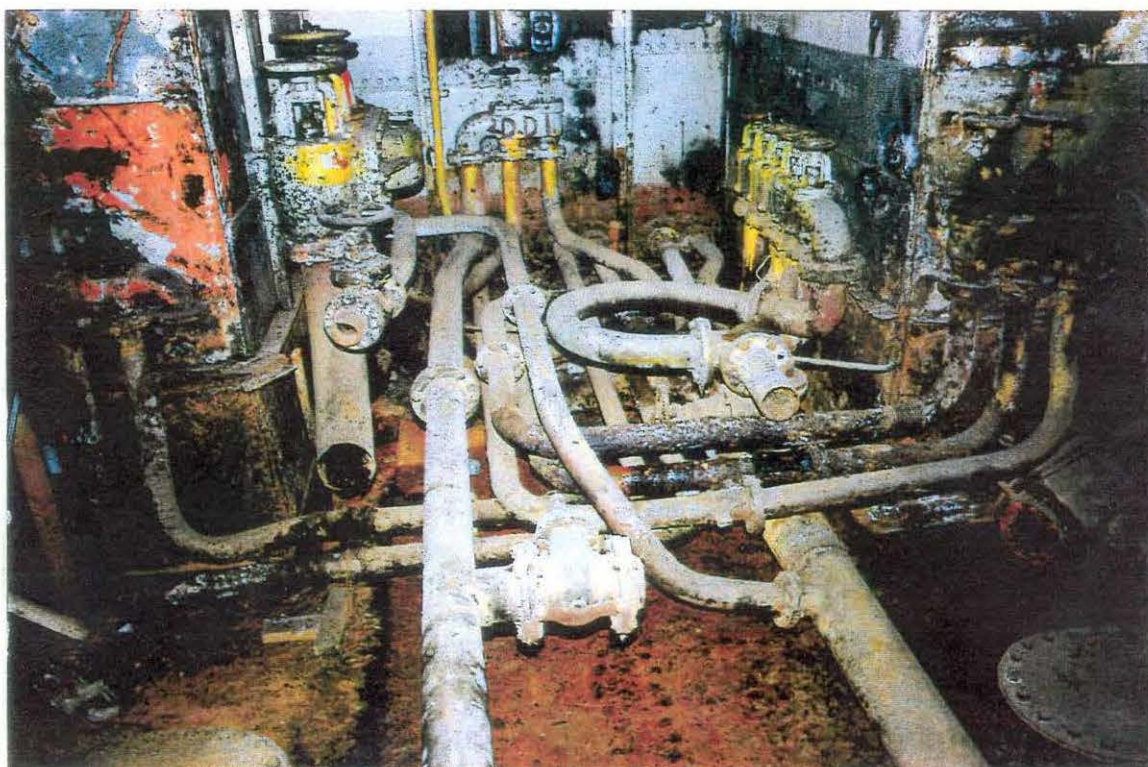
##### a) Pumps

Bilge system pumps (3) have been overhauled and are in good working condition per maintenance people. Rados International Corporation personnel did not observe the pumps in operation. The forward emergency diesel pump at frame 225 is in good condition and is connected to the bilge main and to the ballast system, but a second diesel pump Fwd has not been connected.



b) Piping

Piping installed during the conversion is PVC mixed with steel, and in fair to good condition. All bilge wells are clean and have water to cover the suction strainer. Bilge piping forward of frame 260 is badly corroded, with some sections completely rusted out, making the system inoperative. Some piping has been replaced at some of the bilge wells. Watertight bulkheads which could ordinarily isolate various areas of the bilges are non-existent, subjecting the ship to total flooding in case of a catastrophic disaster.



**PART OF BILGE PIPING SYSTEM**

c) Valves

Bilge suction valves in some areas are "frozen" making them inoperable. All valves must be overhauled to assure they are in proper working order.

Amount	\$ <u>283,000.00</u>
--------	----------------------

#### J. Ballast System

The ballast system presently installed on the ship is connected to the bilge main-header and utilizes the bilge pumps to transfer water to and from 12 individual valved wing tanks, 6 starboard and 6 port. However, this system is not being used. Ballasting is accomplished by using a hosed fill line from the ship's Fire Main into the tanks on "D" deck, and drained by gravity to the sea.

The ballast system as it is now connected lacks the flexibility to make it a viable system. This problem can be corrected by adding seven (7) valves and two (2) short lengths of pipe, which would allow transfer to and from any two tanks.

Amount                      \$ 82,000.00

#### K. Deck Drains

Inspections have revealed that some deck drains are partially or completely plugged. It is recommended that the drain pipes be cleaned out to insure free flow from point of origin to terminating point. Provide and install strainer plates at scupper intakes to keep out foreign material and debris.

Further investigations show that several drain pipes have rusted through as a result of the corrosive atmosphere. In order to contain this water from overflowing or entering interior bulkheads and/or overheads, it is recommended that these drain pipes be replaced in areas where pipes have rusted through.

Amount                      \$ 60,000.00

#### L. Fire Detection System

The Fire Detection System is outdated and parts are no longer available. The system was last tested in 1990 with few problems reported. However, with limited access and reduced maintenance crews, the possibility exists for a fire to go undetected until it can become a threat to the vessel and the lives of tourist or crew.

It is our recommendation that the Fire Detection System be replaced at this time.

Detailed studies would have to be conducted, but calculating on a square foot area, the cost would be approximately

Amount                      \$ 300,000.00

**M. Public Address System**

The P.A. System is outdated as the Fire Detection System, and is not in total working order. This system would be necessary to guide people from the vessel in case of an emergency.

It is our recommendation that this system be replaced at this time.

Detailed studies would have to be conducted, but calculating on a square foot area, the cost would be approximately

Amount                      \$ 150,000.00

**N. Miscellaneous**

Replacement of the lavatories in the Capstan Club men's restroom.

Spare hoses utilized for the ship to shore umbilicals, should be made in case of rupture of an existing hose. Should that occur, a spare hose can be immediately put into operation without a costly and timely delay occurring.

An inventory of valves, fittings, pipe, belts, motors, filters, etc., which are more likely to be required, should be provided. Input from maintenance personnel can establish the correct inventory.

Amount                      \$ 200,000.00

**QUEEN MARY  
VESSEL ANALYSIS**

**MECHANICAL**

**SUMMARY SHEET**

<b><u>No.</u></b>	<b><u>Description</u></b>	<b><u>Qty</u></b>	<b><u>Mat'l</u></b>	<b><u>Labor</u></b>	<b><u>Immed</u></b>	<b><u>Defer</u></b>	<b><u>Total</u></b>
A.	H.V.A.C.-Existing Repairs		399,700.	326,500.	726,200.		726,200.
B.	H.V.A.C.-System Replaced					2,450,000.	2,450,000.
C.	Sewage System		49,000.	174,000.		223,000.	223,000.
D.	Steam System		45,000.	105,000.		150,000.	150,000.
E.	Firemain System		100,000.	375,000.	475,000.		475,000.
F.	Firemain Replace					1,950,000.	1,950,000.
G.	Gas Line		1,000.	4,000.		5,000.	5,000.
H.	Hot/Cold Water		40,000.	162,000.		202,000.	202,000.
I.	Bilge System		63,000.	220,000.		283,000.	283,000.
J.	Ballast System		27,000.	55,000.		82,000.	82,000.
K.	Deck Drains		15,000.	45,000.		60,000.	60,000.
L.	Fire Detection System					300,000.	300,000.
M.	Public Address System					150,000.	150,000.
N.	Miscellaneous					200,000.	200,000.
				<b>TOTAL</b>	<b>1,201,200.</b>	<b>6,055,000.</b>	<b>7,256,200.</b>

**Volume III**  
**SECTION VIII**

*QUEEN MARY*

VESSEL ANALYSIS

CURRENT  
ELECTRICAL SYSTEMS  
REPORT OF FINDINGS



# QUEEN MARY VESSEL ANALYSIS

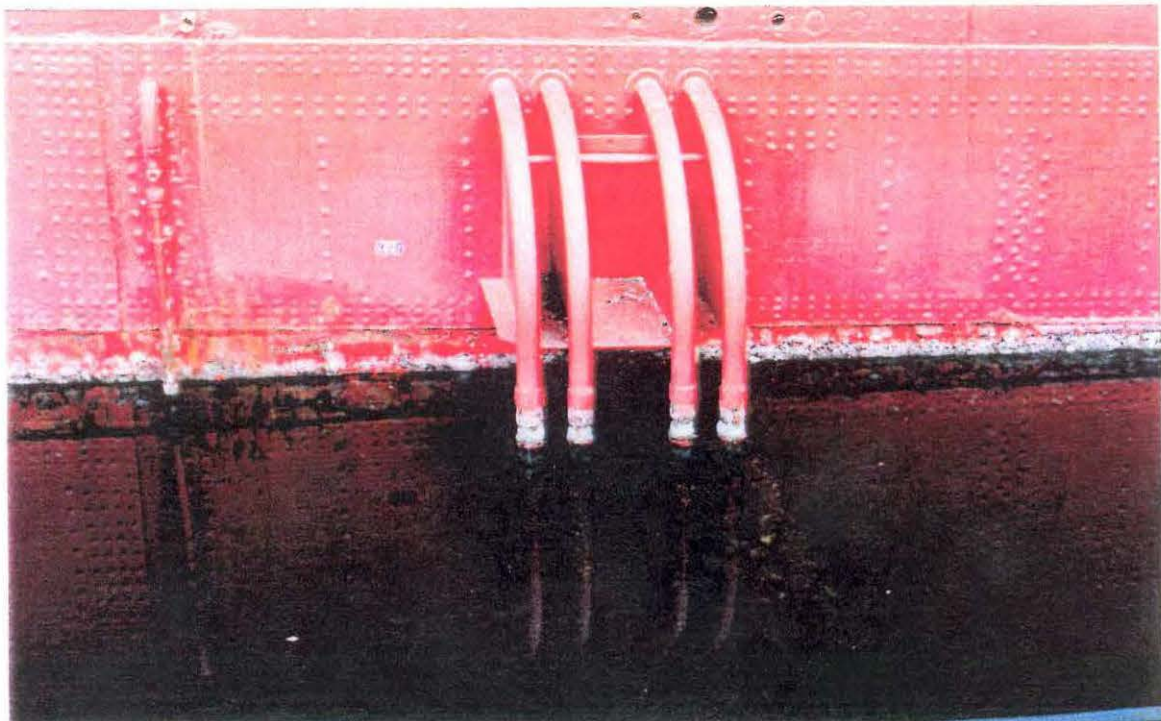
## ELECTRICAL SYSTEM

### INTRODUCTION

The Queen Mary Electrical System was designed and installed by John Brown Shipyards, Clydebank, Scotland during the period of 1934 - 1935. The Ships Generators, Switchboards, Controllers, Motors and Wiring were designed and installed for direct-current (DC) use. Upon inspection of the Electrical System in 1967, it was determined due to defective wire insulation, wooden distribution boxes, outdated transformers and switchboard panels and aged generators, that the installation of a new electrical systems using alternating-current (AC) aboard the Queen Mary would be required and power use would be provided by Southern California Edison Company.

The feeder lines are connected to two (2) 3750 K.V.A. (Kilo Volt Amp) transformers for a total available capacity of 7500 K.V.A.. These transformers have 12,000 volt primary and 4160 volt secondary capacities.

Power is supplied to the structure at 4160 volts by two (2) main feeders. Each one of the feeders can carry the existing load, thus providing redundancy in the event of failure of one of the feeders.



MAIN ELECTRICAL SUPPLY FEEDERS TO SHIP  
VIII - 1

At the structure, the voltages are stepped down from 4160 to 480 volts at each of the thirteen (13) transformers.

Electrical Substation No. 2 feeds all equipment connected to the Emergency Power Network in the facility. In the event of shore power failure, emergency power is supplied by a Delco Diesel Generator, 500 K.V.A., 480, 3 phase, 60 HZ Delta connection located on "B" deck at frame 19. The emergency power available is utilized primarily for lighting, but includes four (4) sewage pumps and two (2) bilge pumps.

There is an existing spare 750 K.V.A. transformer available for use in the event of failure of existing transformers.

### **ASSUMPTIONS AND LIMITATIONS**

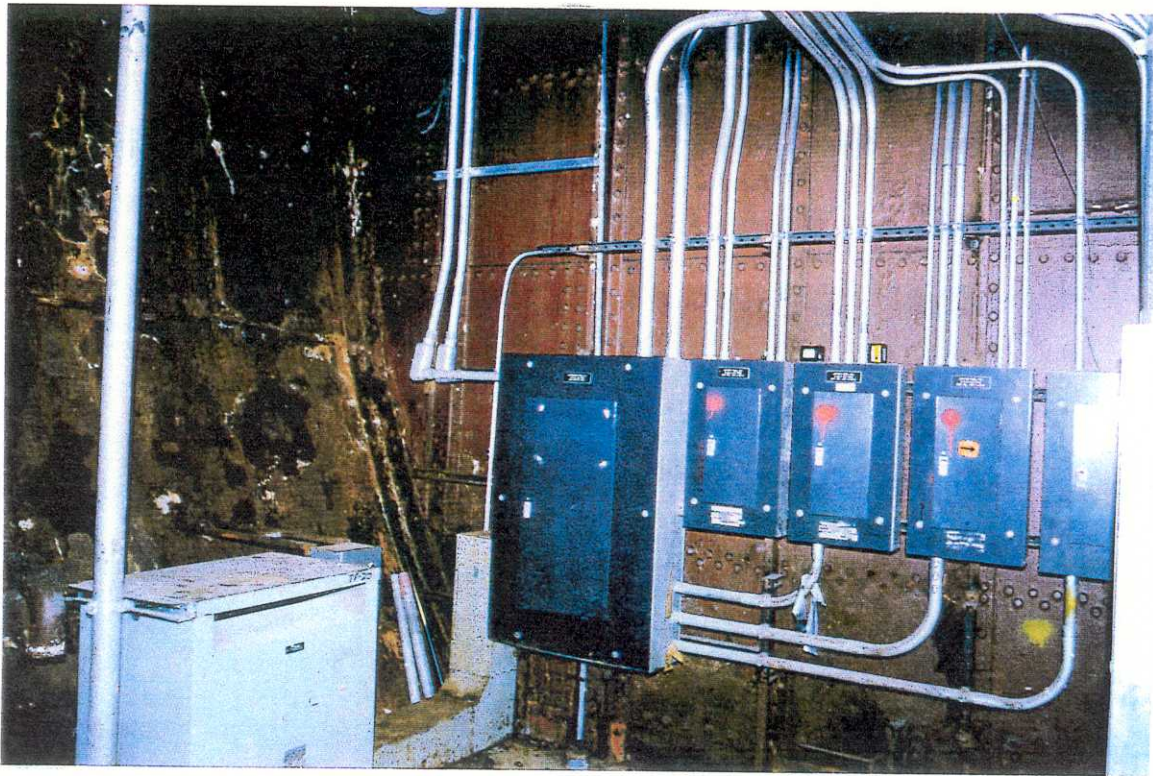
1. The current connected power (available power) for the facility is 7500 KVA (Kilo Volt Amp).
2. The current demand of the facility, taken from reports aboard the vessel, is approximately 2039 KVA or 27% of the total connected capacity.
3. The field research for this report did not include verification of connections for cables or busbars made in the main distribution panels, distribution panels and cable to cable.

### **CONCLUSION**

An important goal of the electrical survey was to verify the existance of proper protective devices on the system. Equipment that cannot withstand or interrupt excessive loads, is subject to damage or destruction and poses a threat to surroundings.

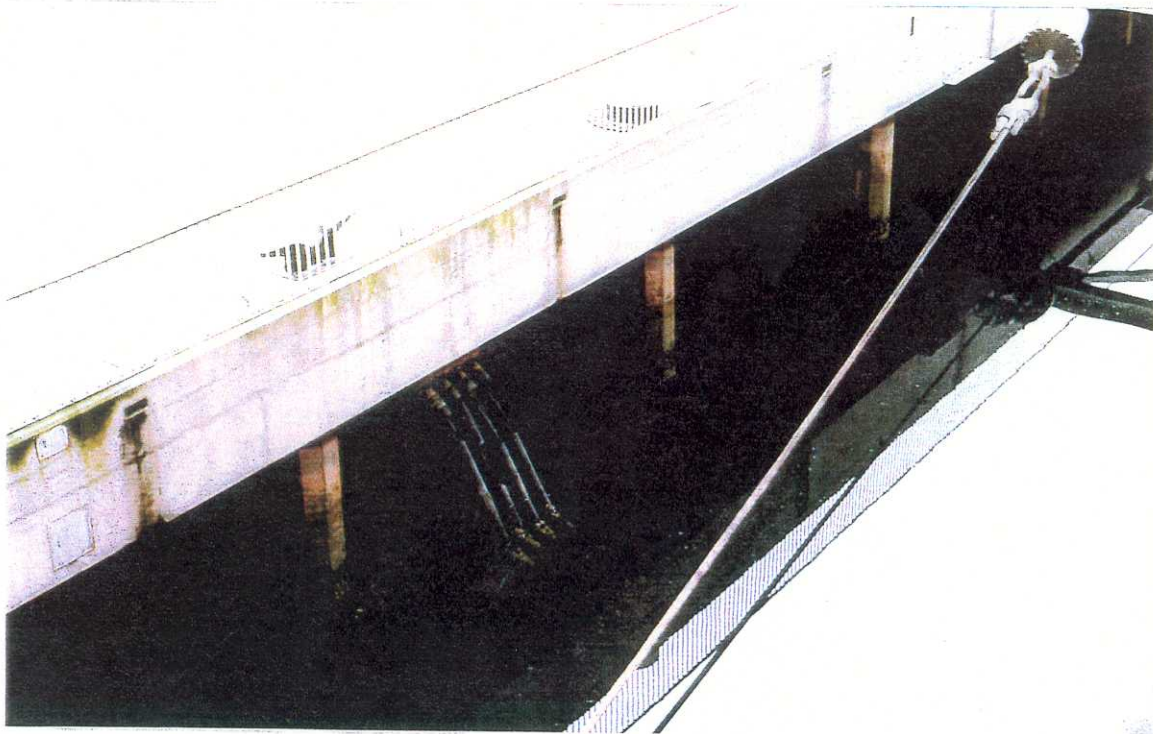
Investigations revealed that most of the equipment has the proper overcurrent ratings on the protective devices. Also, there are ground fault indicators throughout the facility which in general are operational. These indicators allow identification of those distribution panels with current leakage that need to be maintained or repaired.





**TRANSFORMER, DISTRIBUTION AND POWER PANEL**

Power is supplied to the Ship by Southern California Edison. These power lines are under utilized at the present and, additional loads can be accommodated with modifications or additional expense.



**PIER SIDE ELECTRICAL MAIN FEEDERS  
FEEDING SHIP  
VIII - 3**

The maximum load on any of the thirteen (13) substation transformers located at the facility do not exceed 30% of their capacity. At the present there is no demand charge (fee for under utilizing equipment). However, this condition could change at the discretion of SCE. Should demand charges be required in the future, modifications to the electrical distribution system would be recommended to minimize charges.

Some of the equipment associated with each substation includes:

- |                              |               |
|------------------------------|---------------|
| 1) Distribution panel boards | 5) Capacitors |
| 2) Transformers              | 6) Cables     |
| 3) Disconnects               | 7) Conduit    |
| 4) Circuit Breakers          | 8) Motors     |

In general the electrical equipment is approximately (20) twenty years old and in fair condition. However, the main breaker at each of the thirteen (13) load centers are no longer manufactured. Finding parts for replacement is difficult. We recommend the replacement of all the main breakers.

Most of the breakers have not been tested internally to ensure proper operation when needed. We recommend infrared testing and mechanical testing for breakers 200 AMPS or larger.

The existing emergency generator should be tested under a full load condition to ensure proper operation when needed.

All of the electrical rooms have only one exit. We recommend the installation of an additional exit at each location housing a main distribution panel in order to provide an alternate exit as required by code.

Some of the most frequent problems encountered throughout the facility are:

- |                                |              |
|--------------------------------|--------------|
| a) Inadequate lighting -       | 70 locations |
| b) Oversized breakers -        | 10 locations |
| c) Exposed connections -       | 4 locations  |
| d) Deteriorated equipment -    | 6 locations  |
| e) Equipment inaccessibility - | 10 locations |

**A. Electrical System Repairs:**

1. Emergency Generator service, repair and check-out.

Amount                      \$ 15,000.00

2. Install a second exit in all electrical rooms.

Amount                      \$ 7,575.00

3. The following list describes the deficiencies, categorized by substation.

**A. Substation No. 1 L.C. B-114-2**

- Replace main circuit breaker
- Setting on main circuit breaker is 1600 A. Reset to 800 A.

**B. Substation No. 2 L.C. B-19-2E (Emergency)**

- Replace main circuit breaker
- Complete Emergency system test
- Panel 1319 "S" Deck - service area around unit
- Panel 1323 "C" Deck - panel lighting

**C. Substation No. 3 L.C. A-112-2**

- Replace main circuit breaker
- Panel 715 "R" Deck - panel lighting

**D. Substation No. 4 L.C. B-112-2**

- Replace main circuit breaker

**E. Substation No. 5 L.C. F-85-2**

- Replace main circuit breaker
- Panel 523, 523B, 526 & 527 poor condition, replace
- Lighting at panels, 8 locations
- Panel 510 is not accessible

**F. Substation No. 6 L.C. S-107-2**

- Replace main circuit breaker
- Substation in poor physical condition, refurbish

- One oversized circuit breaker, replace
  - Lighting at panels, 9 locations
  - Ventilation at panel 1227 and 1240
- G. Substation No. 7 L.C. M-100-1
- Replace main circuit breaker
  - Panel 604, 200 AMP circuit breaker, 135 AMP wire
  - Lighting at panels, 10 locations
- H. Substation No. 8 L.C. F-165-2
- Replace main circuit breaker
  - Lighting at panels, 6 locations
- I. Substation No. 9 L.C. M-230-1
- Replace main circuit breaker
  - Circuit breaker ratings panel 363 & 386, replace
  - Lighting at panels, 12 locations
- J. Substation No. 10 L.C. B-19-2
- Replace main circuit breaker
  - Service area around panel 1319
  - Lighting at panels, 5 locations
- K. Substation No. 11 L.C. P-143-1
- Replace main circuit breaker
  - Circuit breaker ratings, 4 locations, replace
  - Panel 1124, poor physical condition
- L. Substation No. 12 L.C. SP-202-2
- Replace main circuit breaker
  - Service area around panels, 4 locations
  - Lighting at panels, 13 locations
  - Ventilation, panel 114
- M. Substation No. 13 L.C. R-241-2
- Replace main circuit breaker
  - Circuit breaker rating, panel 241, replace

- Exposed connections, 3 locations
- Lighting at panels, 6 locations
- Service area around panel, 2 locations

Amount                      \$ 98,825.00

The maintenance aboard the vessel is ongoing and some items listed above may have been corrected by the time the Port of Long Beach reaches a decision as to the disposition of those items. However, the information in this report is accurate at the time of the investigation on the vessel.

### **ESTIMATED COSTS (MODIFICATIONS AND REPAIRS)**

The following pages contain the estimated costs to accomplish the necessary modifications and repairs.

The large majority of repairs fell into a finite number of similar repair type requirements allowing several portions of the scope to be estimated with general allowance type costs. Specialized repairs were treated separately.

This estimate was prepared without the benefit of any formalized engineering such that scope assumptions had to be employed as to layout, method, material specifications and setup.

Estimating unit manhour productivity was derived with consideration for the fact that the work is to be performed in discrete locations separated in space such that production type installation is impossible.

Some basic assumptions are as follows:

- Lighting fixture additions will intercept existing circuits.
- Improperly sized circuit breakers shall be replaced.
- Inadequately ventilated electrical rooms will have exhaust fans installed.
- Load center main circuit breaker replacements will be Westinghouse molded case type.

**QUEEN MARY  
VESSEL ANALYSIS**

**ELECTRICAL**

**SUMMARY SHEET**

<b><u>No.</u></b>	<b><u>Description</u></b>	<b><u>Qty</u></b>	<b><u>Mat'l</u></b>	<b><u>Labor</u></b>	<b><u>Immed</u></b>	<b><u>Defer</u></b>	<b><u>Total</u></b>
1.	Emergency Generator Repair and Service		5,000.	10,000.	15,000.		15,000.
2.	Electrical Sub-Stations and Auxiliaries		65,900.	32,925.	98,825.		98,825.
3.	Second Exits in Electrical Rooms		3,575.	4,000.		7,575.	7,575.
				<b>TOTAL</b>	<b>113,825.</b>	<b>7,575.</b>	<b>121,400.</b>



**Volume III**  
**SECTION IX**

*QUEEN MARY*

VESSEL ANALYSIS

MAINTENANCE COSTS FOR  
THE HULL STRUCTURE,  
MECHANICAL AND PIPING SYSTEMS,  
AND ELECTRICAL SYSTEMS

# **QUEEN MARY VESSEL ANALYSIS**

## **VESSEL MAINTENANCE**

### **INTRODUCTION**

The importance of an established preventative maintenance program is an area that cannot be overstated. During the years of operation following the conversion there was some confusion between the leasee and the City/Port regarding maintenance responsibility. This confusion and the lack of a definitive maintenance schedule caused the general deterioration of the vessel.

This condition eased somewhat after the Disney Corporation acquired the lease of the facilities, a maintenance program was established and many needed repairs were performed. However, even an efficient repair and maintenance program cannot overcome numerous years of neglect. As a result, a major renovation program is required to upgrade these systems and structure that have received little attention before a maintenance program can be effective.

The purpose of this section is to address those areas requiring consideration in developing a preventative maintenance program. The items listed in this section represent some of the items which must be incorporated into the program, but does not represent a complete list.

In the outline of a maintenance program, it has to be assumed that at least some of the items of renovation have been completed, since a maintenance program cannot effectively deal with the labor and logistics of major renovations or improvements.

It should be pointed out that the deterioration rate of a structure floating in salt water, with all interior areas open and subject to the effects of the salt water environment, is not significantly different from that of an operating vessel. The major difference being that an operating vessel has a large crew that maintains the vessel around the clock.

Based upon the existing conditions and uses aboard the Queen Mary structure, the following maintenance cost for Hull Structure, Machinery, Piping, and Electrical Systems are as follows:

## **HULL AND STRUCTURAL MAINTENANCE**

Maintenance of the hull, internal structural members, bulkheads, deck plating, wood paneling, wood decking, and inspection of rigging, utilizes both a scheduled maintenance and a mandatory periodic visual inspection of all exposed surfaces and structures which are non-mechanically and non-electrically related.

During the construction of the vessel which began in 1931, the creation of thousands of compartments both large and small were constructed within the shell of the hull and the superstructure. Many of these compartments have been neglected especially in the lower and after sections of the vessel.

Maintenance of the structural portion of the vessel is comprised mainly of re-painting of the steel and wood elements of the ship and in some cases, sandblasting or hydroblasting prior to the recoating. In view of the square footage located between the thirteen (13) decks and including the exterior masts, funnels, deck equipment and life boats, the task is significant in scope. The maintenance of the painting and upkeep of the loading ramps and gangways, the breasting structures, mooring lines/cables and visual inspections of the cathodic protection system including readings from it's six rectifiers are included in the maintenance program.

Included in the hull maintenance is the lubrication of staying wires and cables, tightening of loose nuts and bolts, removal of debris, replacement of defective overhead panels, and the ordering and stocking of appropriate maintenance materials.

Prior to any repairs to machinery, piping, or electrical systems, the hull maintenance group might be required to remove existing panels or like interferences in order to allow the mechanical and electrical maintenance groups to perform their maintenance tasks.

In determining the maintenance cost for the Hull and Structure Group, it is assumed that all the immediate and deferred items listed in Section VI are completed and therefore the following minimum amount of labor and materials are required.

LABOR	\$ <u>600,000.00</u>	
MATERIAL	\$ <u>1,425,000.00</u>	
	TOTAL	\$ <u>2,025,000.00</u>

If the immediate and deferred items are *not* completed the maintenance cost would be as follows:

LABOR	\$ <u>1,261,850.00</u>	
MATERIAL	\$ <u>2,788,150.00</u>	
	TOTAL	\$ <u>4,050,000.00</u>

## **MECHANICAL SYSTEM MAINTENANCE**

All mechanically operated system components and devices must be serviced periodically on a scheduled basis to insure the accurate, dependable and satisfactory performance required of the components and controls. Proper operating condition of components and systems, affects not only the system's operation but more importantly the useful life of the component. Because of the salt water environment, some items need more frequent attention, especially those open to the weather.

The large amounts of mechanically operated system components aboard the Queen Mary along with the varied types and sizes of units, present a tremendous maintenance challenge. Practically all spaces of the 1,018' long by 118' wide vessel, along with the thousands of compartments located within the thirteen (13) decks, contain serviceable system components.

Those emergency systems that affect the safety of personnel aboard the vessel such as the Fire Protection System and the Public Address System, require special attention so that in case of emergency, the prevention of injury and the loss of life is minimized. The successful performance of emergency related systems in actual emergencies, provides psychological comfort to guest and personnel and limits the legal exposure to owners and operators. Other mechanical systems such as the Environmental Control System (ECS), the Sewage System and the Compressed Air System while vitally as important for the successful day to day operation, do not demand the high degree of responsibility and accuracy of system maintenance.

In implementing an effective maintenance program, it is essential that responsible maintenance be performed by knowledgeable, qualified, and dedicated maintenance personnel. Many problems that are encountered are the result of responsible maintenance decisions as opposed to lack of system knowledge.

The following systems and their components require scheduled maintenance and system testing as required by the manufacturer of each system component which obviously vary, and comprise the estimated costs as follows:

- a). Firemain & Sprinkling System and Alarm System
- b). Valves & Piping
- c). Bilge System
- d). Sewage System
- e). Compressed Air System
- f). Environmental Control System (HVAC)

1. Chill Water System
2. Steam System
3. Pneumatic Controls/Actuators
4. Air Handling
5. Fan Units
6. Compressors/Condenses

- g). Hot and Cold Fresh Water System  
h). Public Address System

Prior to any repairs to the machinery, piping systems, the hull maintenance group would be required to remove wood paneling and like interferences to allow the mechanical maintenance group to perform their maintenance tasks. The group would also be required to order and stock appropriate maintenance materials. The testing and inspection of all systems is included.

In determining the maintenance cost for the Mechanical Group, it is assumed that all the immediate and deferred items listed in Section VII are completed and therefore the following minimum amount of labor and materials are required:

LABOR	\$ <u>817,825.00</u>		
MATERIAL	\$ <u>1,952,333.00</u>		
		TOTAL	\$ <u>2,770,158.00</u>

If the immediate and deferred items are *not* completed the maintenance cost would be as follows:

LABOR	\$ <u>2,523,710.00</u>		
MATERIAL	\$ <u>3,016,260.00</u>		
		TOTAL	\$ <u>5,540,000.00</u>

## ELECTRICAL ESTIMATED COSTS

The following list represents the minimum required maintenance for the electrical system and components. As a developing Preventative Maintenance Program is initiated, items peculiar to a specific vessel will arise and should be added to the Maintenance Program. This list is derived from industry practice and ANSI/IEEE recommended practice and is comprised of the following:

### ANNUAL

- Circuit breaker cleaning, testing, inspection and tightening.
- Emergency generator for full load 2 hr test.
- Infrared testing of circuit breaker loading.

### TRI-ANNUAL

- Circuit breaker cleaning, testing, inspection and tightening.
- Emergency generator full load 2 hr. test.
- Infrared testing of circuit breaker loading.
- Ground detector light functional check.
- Ground resistance continuity check.
- Test Transformer Insulation (duble testing).
- Conductor insulation testing.
- Motor control center checkout and large motor overload tests.

The estimated costs for all of the above maintenance was derived from documents and report aboard the vessel. Circuit breaker detailed testing, is to be performed on all breakers 200 AMPS and larger. Cleaning and visual inspection will be performed on all circuit breakers on a load center basis.

Test and inspection prices were derived from documents and reports aboard the vessel.

LABOR	\$ <u>38,175.00</u>
MATERIAL	\$ <u>20,000.00</u>

TOTAL	\$ <u>58,175.00</u>
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**QUEEN MARY  
VESSEL ANALYSIS**

**MAINTENANCE COSTS**

**SUMMARY SHEET**

<b>No.</b>	<b>Description</b>	<b>Qty</b>	<b>Material</b>	<b>Labor</b>	<b>Total</b>
1.	Hull Structure		1,425,000.00	600,000.00	2,025,000.00
2.	Mechanical Piping Systems		1,952,333.00	817,825.00	2,770,158.00
3.	Electrical System		20,000.00	38,175.00	58,175.00
<b>TOTAL</b>			<b>3,397,333.00</b>	<b>1,456,000.00</b>	<b>4,853,333.00</b>

Maintenance is by nature, "Deferred", however ignored maintenance will become major repair items later.

The Material costs listed above, include those items for which outside contractors must be used.

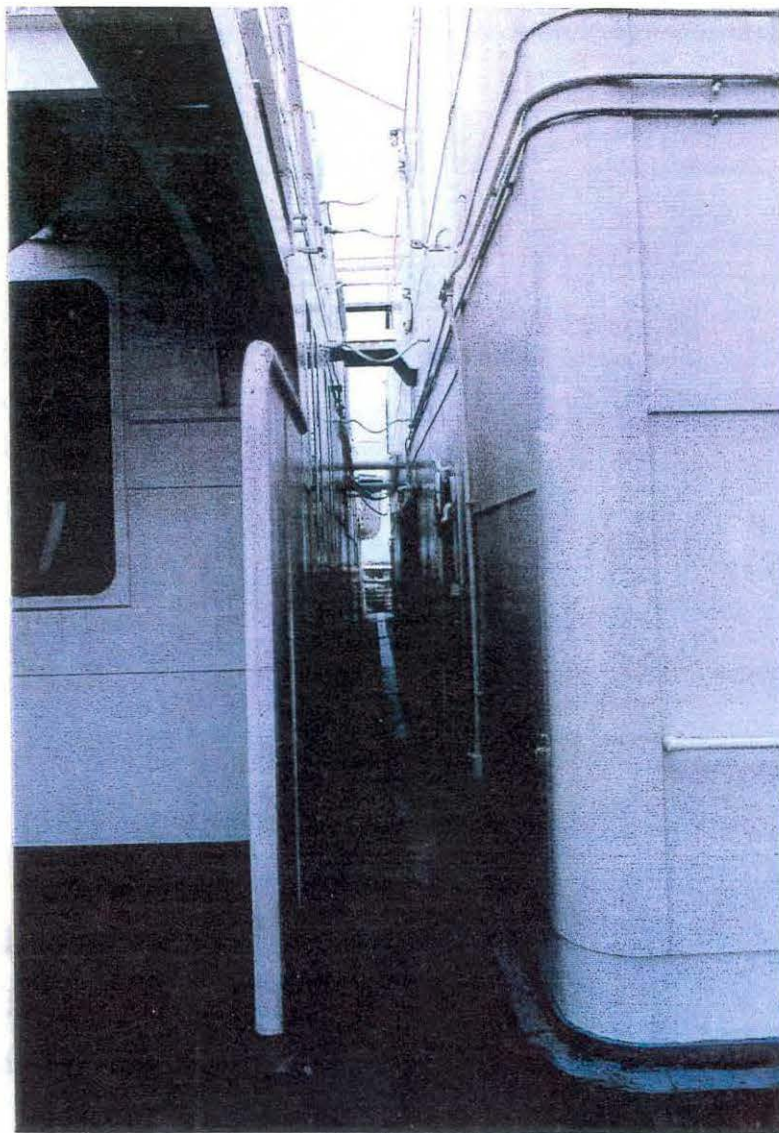


MOORING LINES/CABLES



EMERGENCY EXIT GANGWAY





TYPICAL  
EXPANSION  
JOINT



"R" DECK  
PASSAGEWAY  
PORT SIDE





FUNNEL No.1 UPTAKE - "D" DECK, PORT SIDE

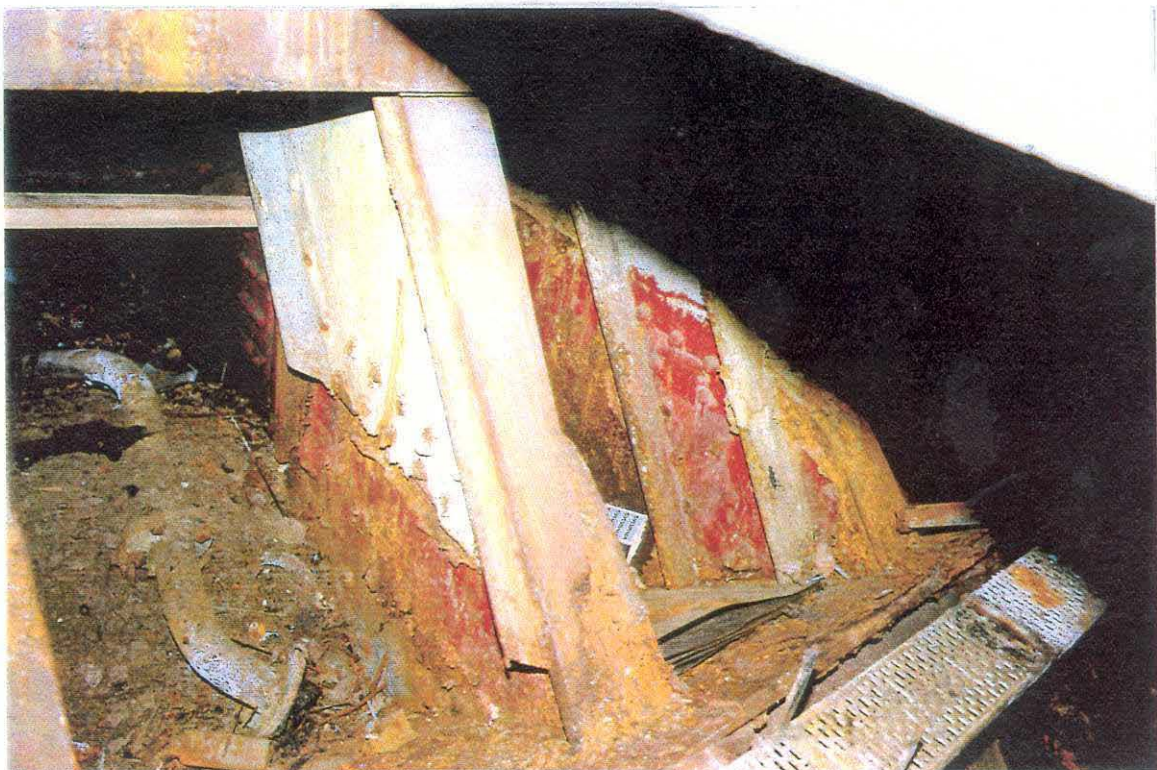


PASSAGEWAY, "F" DECK TO "E" DECK, POST SIDE, AFT





BILGE AREA, PORT SIDE, AFT



SHAFT BILGE AREA, STBD SIDE

**Volume III**  
**SECTION X**

*QUEEN MARY*

VESSEL ANALYSIS

ALTERNATIVE USES FOR  
THE QUEEN MARY

# **QUEEN MARY VESSEL ANALYSIS**

## **ALTERNATE USES**

Economics Research Associates has been authorized by the City of Long Beach to develop alternative use concepts for the Hotel Queen Mary complex. Rados International Corporation has investigated the following concepts and are submitting a rough order of magnitude for design and construction.

**Alternative No. 1 Night-time Entertainment Center**

**Alternative No. 2 Card Club Combined with Entertainment Center**

**Alternative No. 3 Shore Based Maritime Museum with Mini-Tour of Ship**

The following narrative on the revised alternative uses is separated into the three options as listed above. The "fit-out" would include: interior finishes, floors, walls, ceilings, all furnishing, fixtures, equipment, and props and dressings. These cost estimates were provided by entertainment cost consultant David Holtz. The "structural" would include those costs to develop the area to be fitted.

### **Alternative No. 1 Night-Time Entertainment Center**

1. The Observation Lounge would be converted into a 4600 square foot Music Club, Jazz. No structural changes are required. Engineering services required.

A. Engineering Services	\$ 4,500.
B. Fit-Out: (Holtz)	\$ 460,000.00

<b>TOTAL</b>	<b>\$ <u>464,500.00</u></b>
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2. The Queen's Lounge would be converted into a 4600 square foot dinner theater. The wood paneling and dommed ceiling are far too unique and will not be changed. There will be no structural changes required.

A. Engineering Services	\$ 2,000.00
B. Fit-Out: (Holtz)	\$ 480,000.00

TOTAL	\$ <u>482,000.00</u>
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3. The Royal Salon, combined with the King's View Room would be converted into a 4000 square foot sports bar.

- A. Structural changes to remove 33-42 feet of bulkhead and between the two spaces.

This bulkhead is a primary structural member and therefore, it will be replaced with a longitudinal girder and retain the two web frame supports.

Material	\$ 5,000.00
Labor	\$ 20,000.00

A. Total	\$ 25,000.00
B. Fit-Out: (Holtz)	\$ 500,000.00

TOTAL	\$ <u>525,000.00</u>
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4. The Wedding Chapel, combined with the Victorian Room would be converted into a 3300 square foot Magic Club.

- A. Structural Changes to remove 30 feet of bulkhead between the two spaces.

This bulkhead is a primary structural member and therefore, it will be replaced with a longitudinal girder and retain the web frame supports.

Material	\$ 4,000.00
Labor	\$ 19,000.00

A. Total	\$ 23,000.00
B. Fit-Out: (Holtz)	\$ 363,000.00

TOTAL	\$ <u>386,000.00</u>
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5. The Prom Cafe and Lounge, 4100 square feet, will be retained but the theme and decor will be changed.

A. Engineering Services	\$ 3,850.00
B. Fit-Out: (Holtz)	\$ 600,000.00

TOTAL	\$ <u>603,850.00</u>
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6. The Chelsea Restaurant, 2000 square feet, would be retained but the theme and decor will be changed.

A. Engineering Services	\$ 2,000.00
B. Fit-Out: (Holtz)	\$ 300,000.00

TOTAL	\$ <u>302,000.00</u>
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7. The Britannia Salon would be converted into a 9000 square foot Comedy Club.

A. Engineering Services	\$ 4,500.00
B. Fit-Out: (Holtz)	\$ 990,000.00

TOTAL	\$ <u>994,500.00</u>
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8. The Veranda Grill would be converted into a 4000 square foot Music and Dance Club.

A. Engineering Services	\$ 2,500.00
B. Fit-Out: (Holtz)	\$ 400,000.00

TOTAL	\$ <u>402,500.00</u>
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9. The Sun Deck Museum Area, 15000 square foot, will be retained. About 10% of the display area and displays will be changed. Renovate all displays, clean and paint area.

\$ 200,000.00

10. The Sir Winston Room, 3500 square foot, will be retained and refit.

A. Engineering Services	\$ 5,000.00	
B. Refit, Refresh, Interior Decor	\$ 75,000.00	
Upgrade Kitchen Equip & Paint	\$ 75,000.00	
	<b>TOTAL</b>	<b>\$ <u>155,000.00</u></b>

11. Promenade Deck Retail Shops (11,000 square feet).

- Retain Shops in Piccadilly Circus
- Enlarge Shops, Port Side, with displays and doors to Promenade Deck.

- a) "Royal Insignia" (men's store) and "Bit of Britain" (souvenir shop) have been enlarged and are open to the promenade.
- b) "Royal Crystal" shop can be enlarged by deleting bulkheads at frame 243 and 246 to include the spaces now used as a men's restroom and an unassigned office.

Note: A large vent trunk (approx 6' x 6') penetrating through should not be disturbed.

Enlarge the door opening to the promenade at frame 241.

Replace door at frame 247 with display window and add two more windows to frame 250.

Add display windows to promenade between frames 236-239, to passage between frames 243-246.

New shop area (including existing storage) approximately 925 square feet. (Net gained; about 350 square feet)

A. Structural Mods	\$ 60,000.00
B. Basic Interior	\$ 30,000.00
(Not including Tenant improvement)	

**TOTAL** **\$ 90,000.00**



12. Enlargement options - Add 300 square feet of dining to Sir Winston Room. Aft, outboard, corner, port and starboard of this space, there are bulkheads around the mast shrouds. This space, port and starboard, could be opened up for use by shortening the shrouds and re-attaching to new chain plates on the extended deckhouse structure.

A. Srtuctural/Rigging	\$ 75,000.00
B. Fit-Out:	\$ 75,000.00

TOTAL      \$ 150,000.00

GRAND TOTAL:      \$ 4,949,550.00

**Alternative No. 2 - Card Club combined with Entertainment Center.**

The items listed in Alternative No. 1 would be the same for this alternative with the exception of item No. 1, the Observation Lounge would be converted into a Comedy Club and No. 6 the Britannia Salon would be converted into a Card Club. The following is a list of only those changed items.

1. The Observation Lounge would be converted into a 4600 square foot Comedy Club. No structural changes are required.

A. Engineering Services	\$ 5,000.00
B. Fit-Out: (Holtz)	\$ 506,000.00

TOTAL      \$ 511,000.00

6. The Britannia Salon would be converted into a 9000 square foot Card Club.

A. Engineering Services	\$ 10,000.00
B. Fit-Out: (Holtz)	\$ 1,080,000.00

TOTAL      \$ 1,090,000.00

**Alternative No. 3 - Maritime Museum Ashore with Mini-Tour on the vessel.**

A. Engineering Services	\$ 6,000.00
B. Re-Fit	\$ 44,000.00

TOTAL      \$ 50,000.00

The configuration of the Queen Mary to be modified to incorporate the following alternative uses.

**Alternative No. 1 Night-time Entertainment Center**

Amount	<b>\$ <u>4,809,550.00</u></b>
With Enlargment Option	<b>\$ <u>4,959,550.00</u></b>

**Alternative No. 2 Card Club Combined with Entertainment Center**

Amount	<b>\$ <u>4,939,550.00</u></b>
With Enlargment Option	<b>\$ <u>5,089,550.00</u></b>

**Alternative No. 3 Shore Based Maritime Museum with Mini-tour of Ship**

Amount	<b>\$ <u>50,000.00</u></b>
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# QUEEN MARY VESSEL ANALYSIS

## ALTERNATE USES

## SUMMARY SHEET

<u>No.</u>	<u>Description</u>	<u>Engr</u>	<u>Structural</u>	<u>Fit-Out</u>	<u>Total 1</u>	<u>Total 2</u>
1.	Observation Lounge Music Club, Jazz	4,500.00		460,000.00	464,500.00	
2.	Queen's Lounge Dinner Theater	2,000.00		480,000.00	482,000.00	482,000.00
3.	Royal Salon Sports Bar		25,000.00	500,000.00	525,000.00	525,000.00
4.	Wedding Chapel Magic Club		23,000.00	363,000.00	386,000.00	386,000.00
5.	Prom Cafe & Lounge Theme	3,850.00		600,000.00	603,850.00	603,850.00
6.	Chelsea Restaurant Theme	2,000.00		300,000.00	302,000.00	302,000.00
7.	Brittania Salon Comedy Club	4,500.00		990,000.00	994,500.00	
9.	Sun Deck Museum Renovate				200,000.00	200,000.00
10.	Sir Winston Room Renovate	4,200.00		200,000.00	204,200.00	204,200.00
11.	Prom Deck Retail Add and Renovate		60,000.00	30,000.00	90,000.00	90,000.00

*Continued Next Page*

<u>No.</u>	<u>Description</u>	<u>Engr</u>	<u>Structural</u>	<u>Fit-Out</u>	<u>Total 1</u>	<u>Total 2</u>
1.	Observation Lounge Comedy Club	5,000.00		506,000.00		511,000.00
7.	Brittania Salon Card Club	10,000.00		1,080,000.00		1,090,000.00
			<b>TOTAL</b>		<b>4,605,350.00</b>	<b>4,735,350.00</b>
	<b>OPTION-</b> Enlarge Sir Winston Room		75,000.00	75,000.00		<b>150,000.00</b>

**Volume III**  
**APPENDIX "A"**

*QUEEN MARY*

VESSEL ANALYSIS

SUPPORT MATERIAL  
FOR  
HULL and STRUCTURE  
MACHINERY and PIPING  
ELECTRICAL

## *Economics Research Associates STUDY TOTALS*

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>IMMEDIATE</b>	<b>DEFERRED</b>	<b>TOTAL</b>
<b>I</b>	Summary	0.00	0.00	0.00
<b>II</b>	Introdution To Rados Intl corp	0.00	0.00	0.00
<b>III</b>	History of Queen Mary	0.00	0.00	0.00
<b>IV</b>	Analysis of Sept 26, 1990 Study	2,095.00	1,850.00	3,945.00
<b>V</b>	Analysis of Dec 1990 Study	2,734,425.00	288,250.00	3,022,675.00
<b>VI</b>	Hull Analysis and Report of Findings	674,500.00	14,766,500.00	15,441,000.00
<b>VII</b>	Mechanical and Piping Report of Findings	1,201,200.00	6,055,000.00	7,256,200.00
<b>VIII</b>	Electrical Report of Findings	113,825.00	7,575.00	121,400.00
		<b>\$4,726,045.00</b>	<b>\$21,119,175.00</b>	<b>\$25,845,220.00</b>
<b>IX</b>	Maintenance Costs	Per Year	<b>4,853,333.00</b>	<b>4,853,333.00</b>
		<b>ENLARGE OPTION</b>	<b>ALTERNATIVE 1</b>	<b>ALTERNATIVE 2</b>
<b>X</b>	Alternative Uses	<b>\$150,000.00</b>	<b>\$4,809,550.00</b>	<b>\$4,939,550.00</b>

## HULL and STRUCTURE

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b><u>Deck Buckling "A" Deck</u></b>						
1	Install Stanchion			1,000	1,095	2,095	
	<b>TOTAL</b>					<b>\$2,095</b>	
	<b><u>Deck Buckling "C" Deck</u></b>						
1	Replace Deck Plating			850	1,000	1,850	
	<b>TOTAL</b>					<b>\$1,850</b>	
	<b><u>Breasting Structure</u></b>						
1	Sandblast and Re-coat					4,425	
	<b>TOTAL</b>					<b>\$4,425</b>	
	<b><u>Propeller Box</u></b>						
1	Clean and Reweld			2,000	21,250	23,250	
	<b>TOTAL</b>					<b>\$23,250</b>	
	<b><u>Hull Bilges</u></b>						
1	ACM Removal					780,000	
2	Clean, Sandblast and Paint			20,000	1,930,000	1,950,000	
	<b>TOTAL</b>					<b>\$2,730,000</b>	
	<b><u>Indoor Swimming Pool</u></b>						
1	Pool Structural Analysis					225,000	
	<b>TOTAL</b>					<b>\$225,000</b>	

## ***HULL and STRUCTURE***

<i><b>No.</b></i>	<i><b>DESCRIPTION</b></i>	<i><b>Qty</b></i>	<i><b>Units</b></i>	<i><b>Mat'l</b></i>	<i><b>Labor</b></i>	<i><b>Total</b></i>	<i><b>Remarks</b></i>
	<b>Drydocking</b>						
1	Remove & Reinstall Dyke					2,360,000	
2	Drydock, Sandblast, Repair & Paint					3,900,000	
	<b>TOTAL</b>					<b>\$6,260,000</b>	
	<b>Hull Exterior Above Waterline</b>						
1	Staging and Paint					650,000	
	<b>TOTAL</b>					<b>\$650,000</b>	
	<b>Watertight Bulkheads</b>						
1	Repair and Replace					629,500	
	<b>TOTAL</b>					<b>\$629,500</b>	
	<b>Exterior Decks</b>						
1	Repair and Refinish					710,000	
	<b>TOTAL</b>					<b>\$710,000</b>	
	<b>Exterior Decks</b>						
1	Remove and Replace					2,950,000	
	<b>TOTAL</b>					<b>\$2,950,000</b>	
	<b>Sports Deck Teak Deck</b>						
1	New Deck					1,200,000	



## HULL and STRUCTURE

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b>TOTAL</b>					<b>\$1,200,000</b>	
	<b><u>"R" Deck Repair</u></b>						
1	Vinyl Tile and Deck					25,000	
	<b>TOTAL</b>					<b>\$25,000</b>	
	<b><u>Expansion Joints</u></b>						
1	Clean, Repair and Paint					150,000	
	<b>TOTAL</b>					<b>\$150,000</b>	
	<b><u>Elevator and Escalators</u></b>						
1	Repair and Renew					1,925,000	
	<b>TOTAL</b>					<b>\$1,925,000</b>	
	<b><u>Asbestos Containing Material</u></b>						
1	Remove and Clean					2,000,000	
	<b>TOTAL</b>					<b>\$2,000,000</b>	
	<b><u>Handicap Accessibility</u></b>						
1	Modifications					25,000	
	<b>TOTAL</b>					<b>\$25,000</b>	
	<b><u>Occupant Egress</u></b>						

## ***HULL and STRUCTURE***

<i><b>No.</b></i>	<i><b>DESCRIPTION</b></i>	<i><b>Qty</b></i>	<i><b>Units</b></i>	<i><b>Mat'l</b></i>	<i><b>Labor</b></i>	<i><b>Total</b></i>	<i><b>Remarks</b></i>
1	Signage					20,000	
	<i><b>TOTAL</b></i>					<i><b>\$20,000</b></i>	
	<u><b>Pest Control</b></u>						
1	Screens					8,500	
	<i><b>TOTAL</b></i>					<i><b>\$8,500</b></i>	
	<u><b>Mooring Lines</b></u>						
1	Repair and Replace					48,000	
	<i><b>TOTAL</b></i>					<i><b>\$48,000</b></i>	
	<u><b>Life Boats</b></u>						
1	Clean Repair and Paint					100,000	
	<i><b>TOTAL</b></i>					<i><b>\$100,000</b></i>	
	<i><b>TOTAL</b></i>					<i><b>\$19,587,620</b></i>	

## ***MACHINERY SUMMARY***

<b><i>No.</i></b>	<b><i>DESCRIPTION</i></b>	<b><i>Total</i></b>	<b><i>Remarks</i></b>
1	Heating Ventilation and Air Conditioning	726,200	
2	Chilled Water System	208,000	
3	Hot and Cold Water System	202,000	
4	Steam System	150,000	
5	Natural Gas System	5,000	
6	Bilge System	283,000	
7	Ballast System	82,000	
8	Deck Drains	60,000	
9	Sewage System	223,000	
10	Firemain and Sprinkling System	475,000	
11	Replace Firemain and Sprinkling System	1,950,000	
12	Firemain Detection System	300,000	
13	Public Address System	150,000	
14	Miccellaneous	200,000	
	<b><i>TOTAL</i></b>	<b><i>\$5,014,200</i></b>	

**Machinery Totals**

## ***MACHINERY and PIPING***

<b>No.</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>Units</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Total</b>	<b>Remarks</b>
<b><u>Heating Ventilation and Air Conditioning</u></b>							
1	Replace Air Handlers	8	Each	180,000	50,000	230,000	
2	Repair and Clean Air Handlers	18	Each	10,800	56,000	66,800	
3	Replace Fan Coil Units	6	Each	18,000	10,000	28,000	
4	Repair and Clean Fan Coil Units	13	Each	3,900	6,500	10,400	
5	Replace Supply Fans	10	Each	25,000	8,000	33,000	
6	Repair and Clean Supply Fans	50	Each	10,000	25,000	35,000	
7	Replace Exhaust Fans	10	Each	20,000	8,000	28,000	
8	Repair and Clean Exhaust Fans	50	Each	10,000	25,000	35,000	
9	Replace Coils	50	Each	50,000	20,000	70,000	
10	Duct Cleaning and Misc Repair	1	Each	25,000	75,000	100,000	
11	Material Handling	1	Each	10,000	15,000	25,000	
12	New Fan Coil Units For Hotel Spaces	18	Each	37,000	28,000	65,000	
	<b>TOTAL</b>					<b>\$726,200</b>	
<b><u>Chilled Water System</u></b>							
1	Chilled Water Valves	200	Each	20,000	40,000	60,000	
2	Chilled Water Piping and Fittings	500	Feet	25,000	50,000	75,000	
3	Chilled water Insulation	500	Feet	1,000	3,000	4,000	
4	C/W & Steam for New Fan Coil Units	18	Each	18,000	36,000	54,000	
5	Umbilical	2	Each	5,000	10,000	15,000	
	<b>TOTAL</b>					<b>\$208,000</b>	
<b><u>Hot and Cold Water System</u></b>							
1	Valves	200	Each	25,000	52,000	77,000	
2	Piping	2000	Feet	25,000	60,000	85,000	
3	Insulation	2000	Lin Ft	10,000	30,000	40,000	
	<b>TOTAL</b>					<b>\$202,000</b>	

## ***MACHINERY and PIPING***

<b>No.</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>Units</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Total</b>	<b>Remarks</b>
	<b><u>Steam System</u></b>						
1	Valves	300	Each	20,000	40,000	60,000	
2	Piping	1000	Feet	15,000	50,000	65,000	
3	Insulation	1000	Lin Ft	5,000	10,000	15,000	
4	Umbilical	2	Each	5,000	5,000	10,000	
	<b>TOTAL</b>					<b>\$150,000</b>	
	<b><u>Natural Gas System</u></b>						
1	Inspect and Repair	1	Sys.	1,000	4,000	5,000	
	<b>TOTAL</b>					<b>\$5,000</b>	
	<b><u>Bilge System</u></b>						
1	Pumps	3	Each	15,000	25,000	40,000	
2	Piping	-	Each	70,000	100,000	170,000	
3	Valves	15	Each	30,000	43,000	73,000	
	<b>TOTAL</b>					<b>\$283,000</b>	
	<b><u>Ballast System</u></b>						
1	Valves	7	Each	21,000	30,000	51,000	
2	Piping	-	Feet	6,000	25,000	31,000	
	<b>TOTAL</b>					<b>\$82,000</b>	
	<b><u>Deck Drains</u></b>						
1	Clean	200	Each	5,000	30,000	35,000	
2	Strainer Plates	200	Each	10,000	15,000	25,000	

## MACHINERY and PIPING

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b>TOTAL</b>					<b>\$60,000</b>	
	<b><u>Sewage System</u></b>						
1	Overhaul Sewage Pumps	6	Each	8,000	10,000	18,000	
2	Valves Overhaul/Replace	50	Each	30,000	60,000	90,000	
3	Piping	500	Lin Ft	35,000	80,000	115,000	
	<b>TOTAL</b>					<b>\$223,000</b>	
	<b><u>Firemain and Sprinkling System</u></b>						
1	Firemain and Sprinkling	1	Sys.	100,000	375,000	475,000	
	<b>TOTAL</b>					<b>\$475,000</b>	
	<b><u>Replace Firemain and Sprinkling System</u></b>						
1	Firemain and Sprinkling Replace	1	Sys.	600,000	1,350,000	1,950,000	
	<b>TOTAL</b>					<b>\$1,950,000</b>	
	<b><u>Fire Detection System</u></b>						
1	Console and detectors	1	Sys.			300,000	
	<b>TOTAL</b>					<b>\$300,000</b>	
	<b><u>Public Address System</u></b>						
1	Console and periphails	1	Sys.			150,000	
	<b>TOTAL</b>					<b>\$150,000</b>	
	<b><u>Miscellaneous</u></b>						

## MACHINERY and PIPING

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
1		1		75,000	125,000	200,000	
	<b>TOTAL</b>					<b>\$200,000</b>	

## ***ELECTRICAL SUMMARY***

<b><i>No.</i></b>	<b><i>DESCRIPTION</i></b>	<b><i>Total</i></b>	<b><i>Remarks</i></b>
1	Substation and Connected Auxiliaries	98,825	
2	Second Electrical Room Exits	7,575	
3	Emergency Generator Repair and Service	15,000	
	<b><i>TOTAL</i></b>	<b><i>\$121,400</i></b>	

**Electrical Totals**



## ELECTRICAL

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
<b>Substation and Connected Auxiliaries</b>							
1	Substation No.1 C.B. 600AF	1	Each	2,700	225	2,925	
2	Substation No.1 General	1	Each	150	100	250	
3	Substation No.2 C.B. 800AF	1	Each	2,700	225	2,925	
4	Substation No.2 General	1	Each	150	600	750	
5	Substation No.3 C.B. 1200AF	1	Each	4,500	225	4,725	
6	Substation No.3 General	1	Each	150	400	550	
7	Substation No.4 C.B. 1000AF	1	Each	4,500	225	4,725	
8	Substation No.4 General	1	Each	50	100	150	
9	Substation No.5 C.B. 1200AF	1	Each	4,500	225	4,725	
10	Substation No.5 General	1	Each	2,400	3,800	6,200	
11	Substation No.6 C.B. 1000AF	1	Each	4,500	225	4,725	
12	Substation No.6 General	1	Each	1,400	1,700	3,100	
13	Substation No.7 C.B. 1200AF	1	Each	4,500	225	4,725	
14	Substation No.7 General	1	Each	1,100	4,100	5,200	
15	Substation No.8 C.B. 1600AF	1	Each	4,500	225	4,725	
16	Substation No.8 General	1	Each	600	2,400	3,000	
17	Substation No.9 C.B. 1600AF	1	Each	4,500	225	4,725	
18	Substation No.9 General	1	Each	1,400	5,000	6,400	
19	Substation No.10 C.B. 1000AF	1	Each	4,500	225	4,725	
20	Substation No.10 General	1	Each	500	2,200	2,700	
21	Substation No.11 C.B. 1600AF	1	Each	4,500	225	4,725	
22	Substation No.11 General	1	Each	900	800	1,700	
23	Substation No.12 C.B. 1600AF	1	Each	4,500	225	4,725	
24	Substation No.12 General	1	Each	1,400	5,800	7,200	
25	Substation No.13 C.B. 1600AF	1	Each	4,500	225	4,725	
26	Substation No.13 General	1	Each	800	3,000	3,800	
				65,900	32,925		
	<b>TOTAL</b>					<b>\$98,825</b>	

## ***ELECTRICAL***

<b><i>No.</i></b>	<b><i>DESCRIPTION</i></b>	<b><i>Qty</i></b>	<b><i>Units</i></b>	<b><i>Mat'l</i></b>	<b><i>Labor</i></b>	<b><i>Total</i></b>	<b><i>Remarks</i></b>
	<b><u>Exits</u></b>						
1	Second Electrical Room Exit	13	Each	3,575	4,000	7,575	
	<b><i>TOTAL</i></b>					<b><i>\$7,575</i></b>	
	<b><u>Emergency Generator</u></b>						
1	Service, Check-Out and Repair	1	Each	5,000	10,000	15,000	
	<b><i>TOTAL</i></b>					<b><i>\$15,000</i></b>	

## **ALTERNATIVE USES STUDY**

	ALTERNATIVE 1		ALTERNATIVE 2	
OBSERVATION LOUNGE	MUSIC CLUB	464,500	COMEDY CLUB	511,000
QUEEN'S LOUNGE	DINNER THEATER	482,000	DINNER THEATER	482,000
ROYAL SALON	SPORTS BAR	525,000	SPORTS BAR	520,000
WEDDING CHAPEL	MAGIC CLUB	386,000	MAGIC CLUB	381,000
PROM CAFE AND LOUNGE	RESTAURANT	603,850	RESTAURANT	603,850
CHELSEA RESTAURANT	RESTAURANT	302,000	RESTAURANT	300,000
BRITTANIA SALON	COMEDY CLUB	994,500	CARD CLUB	1,090,000
VERANDA GRILL	MUSIC AND DANCE CLUB	402,500	MUSIC AND DANCE CLUB	402,500
SUN DECK MUSEUM	MUSEUM, RENOVATE	200,000	MUSEUM, RENOVATE	200,000
SIR WINSTON ROOM	RESTAURANT	155,000	RESTAURANT	155,000
PROM DK RETAIL SHOPS	RETAIL, RENOVATE	90,000	RETAIL, RENOVATE	90,000
ENLARGE, OPTION	SIR WINSTON ROOM	150,000	SIR WINSTON ROOM	150,000
	WITH ENLARGE	4,755,350		4,885,350
	W/O ENLARGE	4,605,350		4,735,350

## ***ELECTRICAL MAINTENANCE***

<b>No.</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Total</b>	<b>Remarks</b>
	<b><u>Maintenance Requirements</u></b>					
1	C/B Clean, Inspect, Test, and Torque	13	1,450	2,925	4,375	
2	Test Motor Overloads	20	1,850	3,000	4,850	
3	Test GF System	100	7,050	15,000	22,050	
4	Test Insulation (Doble)	13	2,900	3,900	6,800	
5	Test Grounding System	13	2,850	5,550	8,400	
6	Megger Cables	100	3,750	7,500	11,250	
	<b><i>TOTAL</i></b>				<b><i>\$57,725</i></b>	
	<b><u>Emergency Generator Test</u></b>					
1	Start, Load Test (2Hrs)	1	150	300	450	
	<b><i>TOTAL</i></b>				<b><i>\$450</i></b>	

**Volume III**  
**APPENDIX "B"**

*QUEEN MARY*

VESSEL ANALYSIS

SOURCE  
AND  
REFERENCES

## **APPENDIX "B"**

The following list represents publications and articles used in the preparation of this report.

ANSI A159.1-1972 Surface preparation specifications  
Steel structures painting council

CORPRP Companies, Inc.  
Corrosion investigation of the Hotel Queen Mary dated  
26 November 1989

NEC - National Electric Code

NFPA - National Fire Protection Association

OSHA - Occupational Safety and Health Administration

Port of Long Beach  
Exterior and Interior Hull Investigation Report  
dated 16 October 1991

UBC - Unified Building Codes

In addition to the above publications and articles information on specific items were obtained from the following sources:

Entertainment Cost Consultant - David Holtz

ERA - Economics Research Associates

Disney Company

**Volume III**  
**APPENDIX "C"**

*QUEEN MARY*

VESSEL ANALYSIS

DOCUMENT  
CONTROL

## APPENDIX "C"

### Document Control

The drawings aboard the vessel totaling a few thousand, include the original builders drawings and subsequent conversion and modification drawings. These drawings are spread throughout the ship with two major areas of storage. The primary storage areas ("A" Deck fwd & "F" Deck aft) are incomplete disarray and each time a drawing is needed, hours or days of searching is required.

The following is offered for the information and consideration of the reader and not listed as a work item or option. But for an item as important as ships drawings, we feel that someone should investigate the possibilities listed below.

To organize the drawings aboard the vessel, one large area should be selected and all drawings delivered to that area, a search throughout the vessel to collect all drawings not delivered to that area

Drawings are to be separated and cataloged using a computer to track each drawing. After all drawings are cataloged and the computer has sorted to some intelligent order, the drawing will be indexed and stored in that sorted order. Drawings not found should be documented.

A single space aboard the vessel should be selected to house the stored drawings with someone in charge of document control. The computer should be used to track the subsequent use of all drawings.

It may be worthwhile having an inexpensive Ozalid blueprinting machine in the area. This would allow someone to take a print of the drawing instead of the original.

The following database fields may represent the minimum information required on each drawing

- |                                     |   |
|-------------------------------------|---|
| 1. Index No.                        | Search any field to find drawing        |
| 2. Drawing No.                      | Maybe color coded sets for quick ident, |
| 3. Drawing Title                    | i.e., Blue - builders dwgs              |
| 4. Original/Print                   | Green - Conversion dwgs                 |
| 5. Building/Conversion/Modification | White - Modification dwgs               |
| 6. Drawing Revision                 |   |
| 7. In File/Checked Out              |   |
| 8. Checked Out By:                  |   |
| 9. File Location                    |   |

Amount                      \$ 100,000.00



locations and/or the inability to dismantle parts of the ships structures, such as the teak wood decks that cover steel deck plating; interior wood paneling that covers piping and wiring; material, and areas that contain asbestos, tanks that contain ballast, the underwater portion of the hull structure, and the overhead paneling that encloses firemain and sprinkling piping.



This engineering study will determine and evaluate the estimated costs to repair and maintain the structure and facilities and address new concepts developed by ERA.

Using the technical information provided by the inspection engineers, our estimating department has generated a "Projected Cost Estimate" for needed repairs, modifications, and new use concepts. The purpose of this undertaking is to provide the City and the Port of Long Beach, technical and financial information in order to assist in determining recommendations, regarding the present use and future of the Queen Mary. Projected cost estimates are developed for the following items:

- Item I      Analysis of the Physical Condition of  
the Queen Mary and Minimum Required  
Investment to Bring the Complex up to  
Industry Standards.

**Item II** Minimum Required Investment Cost for Maintenance Operations on the Queen Mary.

**Item III** Evaluation of New Use Concepts developed by Economic Research Associates.

The Projected Cost Estimates (PCE) developed from the investigation of the structures and systems, provides information in a range of costs, because of the inexact nature and inability to precisely identify all unknown costs. It is not possible to accurately estimate from available drawings and specifications, the necessary costs involved. The unavailability of equipment manuals, outdated equipment, and systems maintenance information is factored into the range of costs.

Past marine experiences have proven that retrofits (repairs, modifications and conversions) in areas that are not accessible, and for which engineering drawings are not available, provide uncertainties until actual demolition occurs and uncovers unknown conditions that might exist. These unknowns, more times than not, result in a chain reaction affecting areas and systems usually not considered. These costs have also been factored into the range of costs.

The estimated costs to perform the scope of work outlined in the following sections are presented in two categories:

- Immediate Repairs
- Deferred Repairs

*Immediate repairs* represent work that should be performed at the earliest possible date.

*Deferred repairs* identifies work that should be performed within a period of three (3) to five (5) years.

## **SUMMARY**

From actual investigations, audio gauge readings, reviews of engineering documents, and of various studies and reports, it is our opinion that the basic hull structure, in spite of some deterioration of the hull plating and rivets since its last drydocking, is adequate to allow for continued operation. The life of the hull plating and adjoining structure cannot be

determined until an underwater inspection and testing is performed on the entire 150,000 square feet of underwater surface area, or until the ship is drydocked to clean, inspect and audio gauge the hull bottom plating.

Additionally, machinery components and piping systems along with electrical equipment and wiring systems that require repairs and/or replacement, are opinioned to be adequately suited to allow for continued operation provided maintenance programs are implemented to prevent further deterioration of these systems. Each successive year the structure and/or systems are operated, gradually contributes to the overall decline. Even though the ship has been well maintained under the operation of Disney, the previous years of operation were highlighted by a poor maintenance program.

The conclusion of the Report, is based upon the scope of work study outlined in the following sections. The following Projected Cost Estimated (PCE) to upgrade the Queen Mary to Industry Standards, where applicable, are provided.

## **FACTORS**

A Maintenance Program should be implemented as soon as possible. Many of the recommendations listed herein are required to either keep the ship operating or to bring it up to acceptable quality standards. Following completion of these items, a Preventive Maintenance Program is necessary to keep the Floating Structure from considerable deterioration for an extended period of time.

Because of the volume of work required at so many locations throughout the ship, it is also our opinion that it would be necessary to accomplish that work in a minimum of a Three Year Planned Program. This would reduce the impacts on operations, improve efficiencies in Re-Construction and Management and allow for a more controlled cash flow.

Rados has attempted to provide an accurate statement of the vessels conditions, and accurate "Projected Cost Estimates" (PCE). The enclosed various cost projections are considered budgetary in nature. In some cases, where access to particular structures or systems was limited, educated guesses are provided based upon past experiences in the marine industry. All information and costs provided are predicated upon normal working hours and days. The information contained in this report is believed to be reasonably correct, but not guaranteed, and Rados International Corporation shall not be responsible for any errors, omissions or misrepresentations.

Due to the configuration of the ship, normal techniques of commercial building construction

do not apply. Conversion contractors working in a shipboard environment are usually limited to personnel experienced in the marine industry rather than those in building trades. These maritime shipwrights are accustomed to working in a compartment which is curved in almost every direction, while at the same time, floating and rolling from side-to-side. The normal building construction techniques which utilize plum bobs and carpenter levels, are not acceptable for most of these applications because of the curvature of the decks from shear and camber. This labor factor has been included in the costs to upgrade and maintain the ship.

A particular area of concern is developing costs related to this study, involve the inclusion of material handling costs for repairs, maintenance and remodeling. For any "area" aboard the ship, the transport of materials from the shore to specific locations within the ship, cause significant cost impacts not normally encountered. This logistics problem for the handling of large and heavy materials from shore to ship is difficult because of the necessity of heavy lift crane requirements and the necessity of multiple movements for each item to arrive at its final destination. The difficulties and cost impacts increase significantly as the materials are distributed and transferred throughout various compartments within the ship. Depending upon the location of the work-area, access for large steel plates, structural components, over sized equipment, panelling, carpet and like items is severely limited. Even though some trunk access is available, rail systems and rigging systems need to be installed in each space to transport oversized and heavy objects. The forward trunk space on decks "A", "B" and "R", were decked over during the conversion to create continuous decks and utilize the spaces more effectively. This covering negated the possibility of utilizing this trunk for material distribution. The uptakes in the boiler rooms, the areas from which all machinery and material was removed during the conversion, were recovered and the funnels replaced atop, thereby eliminating the trunks as viable material handling accesses. The aft trunk although more accessible, is limited to specific areas in the stern. Access for material handling through the convention area via double ramp doors is the most direct access for spaces within the convention areas and boiler rooms. Door access into each compartment limits the sizes of materials which can enter a space unless larger openings are created to transit throughout spaces within the ship. Replacing these cut-out openings additionally add to the cost factor of the material-handling phase.

In summary, considerable time and effort has been expended investigating systems aboard the ship, reviewing engineering documents and examining previous studies and reports of the various structures and systems aboard the Queen Mary. The following "Summary Sheet" represents the Projected Cost Estimates as determined for the minimum investment required to:

- a). Bring the complex up to industry standards.
- b). Provide for a comprehensive maintenance operation.
- c). Incorporate new use concepts as developed by ERA.

**HOTEL QUEEN MARY**  
**VESSEL ANALYSIS**

**RADOS INTERNATIONAL CORPORATION**  
**P.C.E. ESTIMATE**

**SUMMARY SHEET**

<b><u>CATEGORY</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>TOTAL</u></b>
<b>A)</b>	Analysis of the Physical Condition of the Queen Mary and Minimum Required Investment to Bring the Complex Up To Industry Standards	
	• Immediate Items	\$ <b><u>5,987,045.00</u></b>
	• Deferred Items	\$ <b><u>21,119,175.00</u></b>
	<b>TOTAL</b>	\$ <b><u>27,106,220.00</u></b>
<b>B)</b>	Minimum Required Investment Cost for Maintenance Operations on the Queen Mary.	\$ <b><u>4,853,333.00</u></b>
<b>C)</b>	Evaluation of New Use Concepts as Developed by ERA.	
(1)	Nitetime Entertainment Center	\$ <b><u>4,809,550.00</u></b>
(2)	Card Parlor Combined With Entertainment Center	\$ <b><u>4,939,550.00</u></b>
(3)	Maritime Museum on Shore with Mini-Tour	\$ <b><u>50,000.00</u></b>

**Volume III**  
**SECTION II**

*QUEEN MARY*

VESSEL ANALYSIS

INTRODUCTION  
TO  
RADOS INTERNATIONAL CORPORATION

# **RADOS INTERNATIONAL CORPORATION**

Rados International Corporation is a privately held California corporation located in its office building at 1300 South Beacon Street in San Pedro, California overlooking the Los Angeles Harbor.

The corporation, a naval architectural and marine engineering firm is the current organization under the Rados family ownership and management now in its third generation, which has been continually devoted to serving the needs of the marine industry and those of the U.S. and foreign governments. The staff and management of Rados International is dedicated to maintaining the high degree of professional excellence in all operational areas. This standard has become recognized throughout the industry as the hallmark of engineering, design and program management undertaken by Rados International.

The corporation has provided the following activities for both the domestic and international clients:

- Ship and marine structure design and engineering
- Ship and modification design and engineering
- Special ships system design and engineering
- Shipbuilding facilities design and engineering
- Ship Brokerage
- Marine Surveyor services
- Owners resident inspection services
- Scientific and computer analysis of marine structures
- Conceptual studies
- Concept study development
- Technical training in ship and shipboard systems
- Technical consulting service

Our staff of Naval Architects, marine engineers and other professional personnel are thoroughly conversant with the current rules and regulations of American Bureau of Shipping (ABS), Bureau Veritas, Germanischer Lloyd's, Det Norske Veritas, U.S. Maritime Administration (MARAD), and Lloyd's Register. We are thoroughly acquainted with U.S. Coast Guard (USCG) regulations, Safety of Life at Sea (SOLAS), and Inter-Governmental Maritime Consulting Organization (IMCO) requirements as they apply to new designs and modifications to existing vessels.



During the past years the Rados Group designed and constructed a number of vessels for the Department of the Navy, Army and Air Force as well as for the commercial industry. Major repairs and modifications were performed on all types of naval and commercial vessels.

Typical programs performed by Rados International Corporation include design engineering and construction supervision for both military and commercial industries including tankers, cargo vessels, oil drilling vessels, ocean mining vessels, pipe laying barges, cable laying vessels, oceanographic vessels, fishing vessels, passenger vessels and fire fighting boats.

Major modification projects include work on aircraft carriers, battleships, cruisers, frigates, destroyers, the HMS Queen Mary, the HMS Queen Elizabeth, the S.S. United States, Princess Cruise Lines, Cunard Cruise Lines, Admiralty Cruise Lines and Automation of Engine Rooms on various ships.

Our services have been performed in over ten different countries of the world.

During the past years, the Rados Corporations have received letters of commendation and awards from the United States Department of the Navy, Branches of the Army and Air Force; Governments of Argentina, Mexico, England, Spain and Italy, and from domestic and foreign shipping corporations for efficiency in design, construction and cost containments.

In 1967, Rados International Corporation was selected over a number of firms in the United States to provide a team of engineers to board the HMS Queen Mary in Southampton, England and travel with the vessel to New York and back to investigate and determine the condition of the vessel, its machinery and equipment. Report of findings were submitted to the City of Long Beach. Rados was subsequently selected as the Naval Architecture and Marine Engineering firm to design and develop detail construction drawings and specifications to convert the HMS Queen Mary a floating structure, into a hotel, convention center, museum, shopping area, restaurants and tour facility.

During the past years, Rados International Corporation has been awarded contracts by the Wrather Corporation and later the Disney Company to perform studies and develop detail construction drawings and provide supervision for repairs, maintenance and modifications to the structure and for new attractions aboard the Queen Mary.

Over the past 25 years, Rados International Corporation has developed its library and files of various specifications, drawings and equipment lists of both the originally designed vessel, modification drawings of her conversion in 1968-71, and subsequent space and equipment modifications undertaken.

**Volume III**  
**SECTION III**

*QUEEN MARY*

VESSEL ANALYSIS

A HISTORY OF  
THE QUEEN MARY

## **HISTORY OF THE QUEEN MARY PROGRAM**

The Queen Mary was designed and constructed by the John Brown Shipyard, Clydebank, Scotland in the year 1936. The original main characteristics of the ship were as follows:

Overall Length	1019.6 Feet
Beam	118.0 Feet
Draft	39.4 Feet
Gross Tonnage	81,23.7 Tons

The hull was designed and built in accordance with the Rules and Regulations of British Lloyds (Lloyds of London) for the highest class 100 A1. Future modifications to structural elements of the floating structure have generally conformed to the Uniform Building Code (UBC). Where ship structures are involved the elements have conformed to the Principals of Naval Architecture and Marine Engineering.

The hull structural elements (plates, shapes and rivets) were constructed using mild steel No. 28-32. This material is roughly equivalent to A-36 structural steel with a yield strength of 33 KSI (Kips per square inch). 1 Kip = 0.45 L.T.

The hull plate thickness as designed, ranges from 1.05 inches on the bottom plating, to 1.20 inches on the turn of the bilge, to 1.01 inches at the "A" Deck which forms the strength deck of the Queen Mary. The bow and stern hull plating areas vary from .72 inches to .80 inches in thickness, due to the less bending moment (stress) requirements for the hull structure. These plate thicknesses far exceed the requirements set forth by the strict Lloyd's Register of Shipping Classification Society.

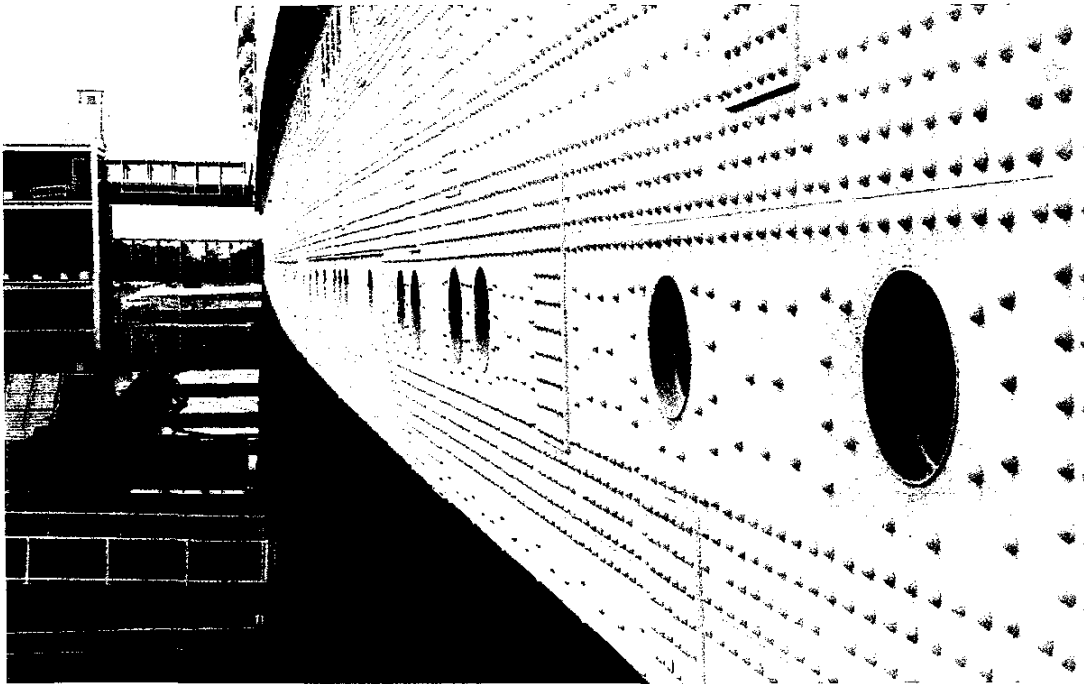
The steel frame-spacing within the ship varies from 24 inches at the bow and stern areas, to 36 inch spacing at the mid-section area of the vessel. These frames running athwartship (Port to Starboard) are .50 inches thick and have lighting holes cut out of the frames to reduce weight.

The Queen Mary was designed with thirteen (13) decks. The strength deck, namely the "A" Deck is .66 inches thick, while the other decks are .50 inches in thickness.

The hull area below the "R" Deck was subdivided into seventeen (17) watertight bulkheads with access through remote controlled watertight doors. These bulkheads and doors were constructed using .50 inch plate.

As the vessel exists today, only two originally constructed watertight bulkheads remain as initially constructed. The remaining fifteen (15) W.T. Bulkheads have been extensively modified or have had major portions of the bulkheads removed. Additionally, none of the remote controlled watertight doors initially installed in the bulkheads are operable. Most have been locked in the open position with pneumatic piping disconnected.

The hull structure of the vessel was constructed using ten million steel rivets to fasten the steel plates to the scantlings. These rivets were 1-1/8 inch in diameter and varying from 2 to 6 inches in length. The hull structure in terms of strength, far exceeds current construction methods, and is considered one of the strongest commercial passenger liners ever built.



**HULL PLATING AND RIVETING PORT SIDE**

During the construction of the Queen Mary, asbestos containing materials (ACM) were used in practically every form of marine construction providing thermal protection, insulation and fire protection to piping, interior bulkheads and compartmentation boundaries. A typical product used aboard the ship was "Turnall Asbestos Wood". This material will not burn and resists fire. This material was used in the construction of staterooms, hallways, lounges, dinning rooms, restaurants, offices, etc. ACM was used for pipe insulation as well as ducting for air and heating, and it was used as insulation and sound proofing for machinery equipment, boiler rooms, electrical wiring systems, and the like.

The ship contains 13 elevators, which were installed in 1934 to move passengers from deck to deck. These elevators were not fully automatic and do not meet state and federal requirements.

The HMS Queen Mary contained 321 first class staterooms, 347 cabin class rooms and 281 tourist class cabins, for a total of 949 staterooms for the passengers located on Main; "A" and "B" Decks. There were also staterooms for 1174 officers and crew.



**TYPICAL STATEROOM**

The ship contained three (3) separate zones for the passengers, the bow section contained the tourist class, the midship section contained the first class, and the aft section contained the cabin class. Each zone had their own cabins, dining facilities, restaurants, galleys, lounges and entertainment areas.

The HMS Queen Mary contained 27 boilers and four turbine engines producing 200,000 horsepower, thus producing a speed of 31.69 knots (37 mph).

The ship contained (24) lifeboats, each carrying 124 people. The boats contained diesel engines and supplies. The Queen Mary's illustrious career included 2,114,000 paying passengers and a total traveled distance of 3,807,277 nautical miles. she saw service as a troop carrier, hospital, and British command ship.

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**SECTION IV**

*QUEEN MARY*

VESSEL ANALYSIS

AN INVESTIGATION OF  
THE QUEEN MARY  
PERFORMED SEPTEMBER 26, 1990  
(REQUESTED BY PORT OF LONG BEACH)

# **QUEEN MARY VESSEL ANALYSIS**

## **INVESTIGATION OF THE QUEEN MARY STRUCTURAL ANALYSIS STUDY**

Sometime after the conversion of the Queen Mary, which occurred during the period of 1968-71, several conditions concerning buckling of the decks appeared. After a thorough investigation and analysis of the complete structure it was determined that the primary reason for these distortions, was the removal of internal bulkheads and trunks to allow access for rip-out and removal of the ships boilers and equipment and re-installation of replacement materials and equipment. These removed structures were never reinstalled by the contractor due to proposed future developments of the lower areas. Other remaining structural members were modified to enlarge interior areas and only local strength members were replaced.

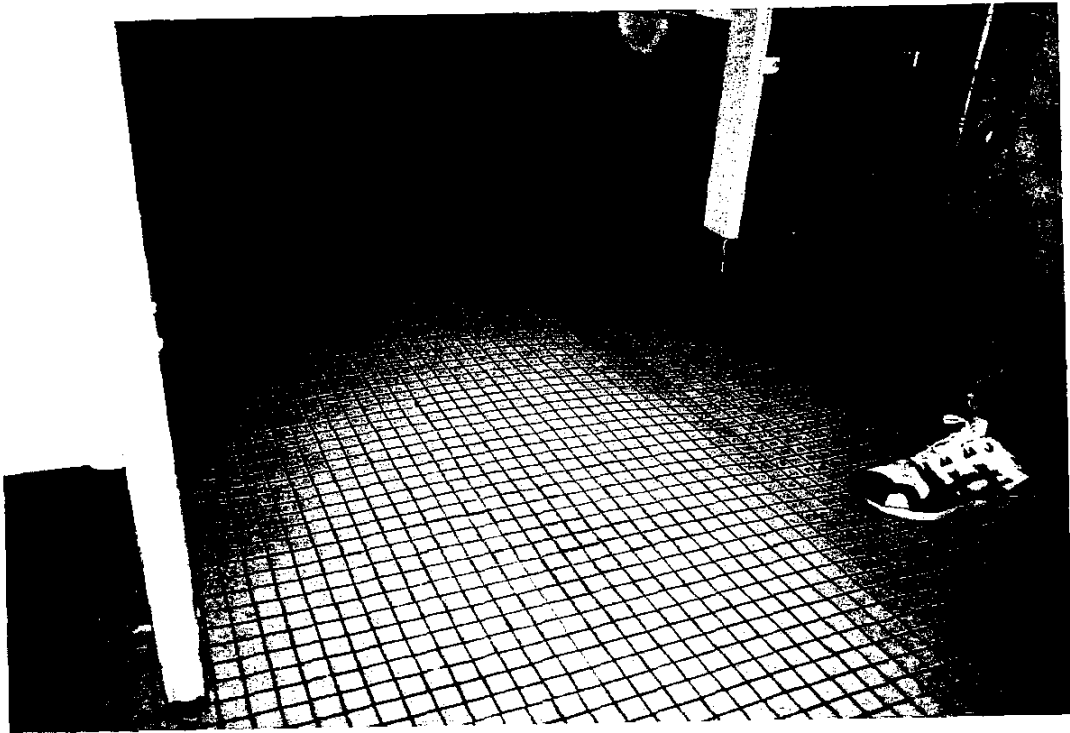
### **I. DECK BUCKLING**

#### **1. "A" Deck Frames 255 - 258 - "Restroom"**

"A" deck, frames 255 - 258, show evidence of overstress in the form of deck buckling and distortion in an area 3 feet x 5 feet on the port side of the vessel.

The buckling appears near the middle of a structural deck area (panel) between frames 255 and 261 and from the ships centerline to the inboard longitudinal system at 14'-6" starboard. Originally, this panel had support assistance from bulkheads over and under at 10'-0" off centerline. These bulkheads were removed. As a consequence, the panel size was doubled by removal of the centerline structural bulkhead. (Note: Some wooden joiner bulkheads were put back in, but provide no structural support).

The buckled "A" deck at frames 255 - 258 is located in a public restroom. Recommended repairs would be the installation of a 3", schedule 40 pipe stanchion between "A" deck and "B" deck at frame 257. Retile floor area as necessary.



"A" DECK RESTROOM - FR. 255 - 258

This would not impair the use of the lock shop existing on "B" deck below. A bulkhead below "B" Deck would carry out this loading.

Amount                      \$ 2,095.00

2. "B" Deck Frames 177 - 180 — "Fan Room"

"B" deck, frame 178, shows evidence of overstress in the form of deck buckling and distortion in an area about 5 feet x 5 feet in the Fan Room near centerline. This area is occupied by ship's service personnel.

This 15 foot section of decking on "B" deck separates two (2) large openings, namely the uptake truck No. 2 and the open area providing the high overhead for the Main Convention Hall. This deck was originally supported by the uptake trunk bulkheads. With the removal of the trunk, stanchions were installed to carry vertical loads, but they give little support for horizontal loads, either fore-and-aft or transverse. The horizontal loads would come from twisting motions on the ship's fendering system and some combined loads due to hogging of the vessel. Whereas sagging is the drooping of the midship portion relative to the bow and stern, hogging is the straining of the ship which makes the bow and stern lower than the midship section.



Since any stiffening or cross bracing in the middle of the Windsor room would be unacceptable, it is recommended to just keep a periodic review of the deck area. It is anticipated that the buckling and distortion will not continue, as long as no additional loads or excess hogging conditions occur, and if the present fendering system is modified to incorporate rubber fenders. We Recommend that the areas be paved over the height of the ripples on "B" deck to eliminate possible tripping hazards.

Amount                      \$ None

3. "C" Deck Frame 191 — "Passageway"

An investigation of "C" deck, at frame 191, approximately 28 feet, port side, shows evidence of overstress in the form of deck buckling and distortion. This area is approximately 2 feet x 3 feet and is located in a passageway used by the ship's tour.

The "C" deck was originally designed near the neutral-axis of the hull girder, and therefore, did not receive much stress loading from hogging and sagging of the hull. During the conversion, the "R" deck was decked-in completely and became the new "upper flange" of the hull girder.

With much of the uptake trunk structure removed, it effectively formed an expansion joint down to the "R" deck to work with the existing expansion joint at frame 180-1/2, thus relieving the Main deck as the upper flange.

Cutting away of large arches through the main longitudinal bulkheads, 14'-6" port and starboard at frames 190 - 192, has occurred for tour viewing of the Boiler Room spaces. Even though stanchions were installed to carry vertical loads, they are not effective when resisting the new hogging, torsional loads and fender loads. Recommend removing section of deck and replace with new plating.

Amount                      \$ 1,850.00

4. "D" Deck Frame 111 - "Convention/Exhibit Area"

"D" deck at frame 111 revealed that the only buckling and torsion that occurred was due to the underlayment of cement. The underside of the decking appeared to be free from undue stress and buckling. With the modification to the fendering system there should be no concern regarding deformation of "D" deck and its related structure. Repairs have been made by the ship's maintenance crew.

II. PIPING SYSTEMS - BILGE TRANSFER SYSTEM

The bilge transfer costs are included in Section 7, Mechanical and Piping System Report

**HOTEL QUEEN MARY  
VESSEL ANALYSIS**

**HULL STRUCTURE ANALYSIS**

**SUMMARY SHEET**

<b><u>No.</u></b>	<b><u>Description</u></b>	<b><u>Qty.</u></b>	<b><u>Mat'l.</u></b>	<b><u>Labor</u></b>	<b><u>Immed</u></b>	<b><u>Defer</u></b>	<b><u>Total</u></b>
<b>I. DECK BUCKLING:</b>							
1	"A" Deck - Restroom	1	295.00	1800.00	2095.00	-----	2095.00
2	"B" Deck - Fan Room	1	-----	-----	-----	-----	None
3	"C" Deck - Passageway	1	250.00	1600.00	-----	1850.00	1850.00
4	"D" Deck - Restroom	1	-----	-----	-----	-----	None
<b>II. PIPING SYSTEMS:</b>							
See Section VII - Item 7							
			<b>TOTAL</b>		<b>2095.00</b>	<b>1850.00</b>	<b>3945.00</b>

**Volume III**  
**SECTION V**

*QUEEN MARY*

VESSEL ANALYSIS

AN INVESTIGATION OF  
THE QUEEN MARY  
EXTERIOR AND INTERIOR  
HULL PLATING STUDY  
PERFORMED DECEMBER 1990  
(REQUESTED BY PORT OF LONG BEACH)

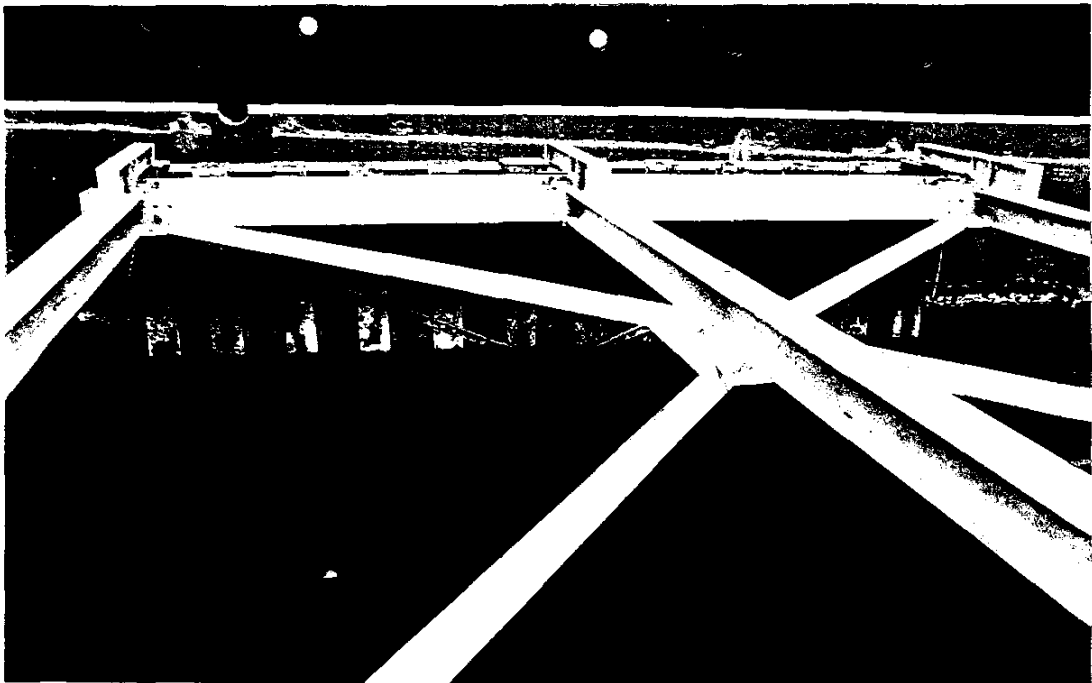
# **QUEEN MARY VESSEL ANALYSIS**

## **AN INVESTIGATION OF THE EXTERIOR AND INTERIOR HULL STUDY PERFORMED DECEMBER 1990**

A survey was performed for the Port of Long Beach to investigate the condition of the Queen Mary, primarily in the areas of the breasting structure, propeller box, bilges and swimming pool. The following report and findings are submitted.

### **1. BREASTING STRUCTURE:**

Inspections revealed that the coating has deteriorated and disbanded and is not effectively coating the structure in the splash zone. To inhibit corrosion of the wetted surface of the structure at the waterline at various tide levels, requires corrective welding and reapplication of the corrosion resistant coating. Cathodic protection is not effective in areas such as the splash zone which are not completely submerged.



**BREASTING STRUCTURE**

**V - 1**

The Breasting Structures should be sandblasted and re-coated to inhibit future corrosion.

Amount                      \$ 4,425.00

2.     **PROPELLER BOX:**

The propeller box has been cleaned and repaired by the Disney Company and an automatically controlled impressed current rectifier, (Cathodic Protection System) has been installed to eliminate future corrosion to the steel box structure. Chemicals are routinely added to the fresh water in the structure to minimize imbalances and abate corrosion.

Interior and exterior sections of the propeller box welding seams, are deteriorated and will require future rewelding. This will require the services of an underwater diver to clean the exterior areas and reweld. Interior areas will require the removal of water from the box, erection of staging and welding of seams.

Amount                      \$ 23,250.00



**PROPELLER BOX**

**3.-23. HULL BILGES - FRAMES 300-51 (item 13 excluded):**

The Bilge and Interior Bilge areas of the Boiler Room, Generator, Engine Room Shaft Alley, Refrigeration Room and Aft Steering Compartment were inspected in those areas that were accessible and free of Asbestos Containing Material (ACM).

The Boiler Room, Generator and forward Engine room frames 112 to 289 are contaminated with ACM and therefore, unavailable for close inspection and Audio Gauging of tank tops to determine plate thickness. During the past number of years contaminated water, trash, debris, and dissimilar metals, have laid in the bilge area causing considerable corrosive action to the tank tops and structures.



**BOILER ROOM No. 3  
AND DOUBLE BOTTOM TANK TOPS**

The contaminated water has been removed from the boiler room bilge area and visual inspections indicate considerable corrosion has occurred to tank tops and structures.



**FWD TURBO GENERATOR ROOM - BILGE**



**BOILER FOUNDATION  
AND  
ACCESS TO DOUBLE BOTTOM TANKS**



Due also to the continuous falling of ACM fibers from the overhead panels, the area is restricted for performing further studies and reports.

An immediate concern should be to remove the Asbestos Containing Materials, and sandblast and paint to further reduce deterioration of the plates and structure. As shown in the photographs, there is no watertight integrity within the respective compartments because of the removal of portions of the watertight bulkheads. Should the vessel for some reason incur a serious, fast flowing leak, damage control in limiting the compartments to be flooded would be non-existent. A serious, unmanageable leak would most likely cause the structure to sink.

The aft section of the Bilge, until recently, had also been filled with contaminated water, debris, trash and dissimilar metals which has caused extensive corrosion to the hull plating, rivets and structures. The majority of contaminated ballast water in the double bottom tanks, has been removed and drilling mud has been inserted as ballast in the double bottom tanks. Trash, debris and dissimilar metals are still present in the bilge aft, thus, a corrosive action and further deterioration of plating, rivets and structure still exists.



**BILGE DETERIORATION  
CENTERLINE / AFT**

This area also contains loose ACM.

1. *Introduction*

2. *Background*

3. *Method*

4. *Results*

5. *Discussion*

6. *Conclusion*

7. *References*

8. *Appendix*

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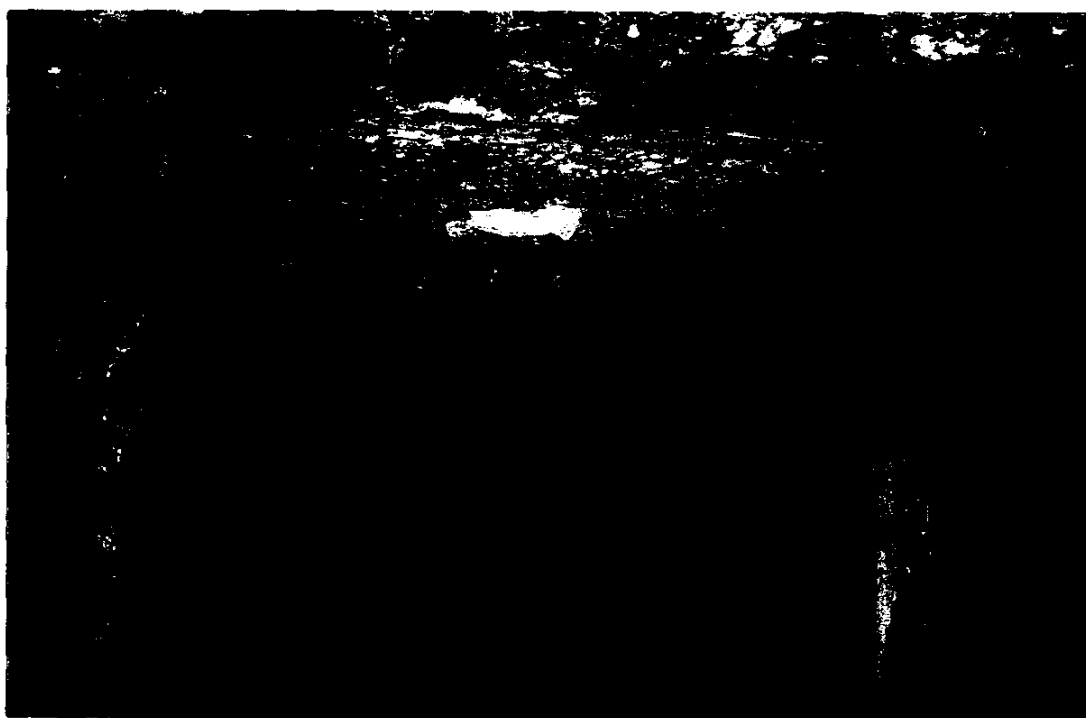
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Investigations of the Pool Complex revealed that due to the number of years of continuously using salt water in the pool combined with the heat generated by operation of the generators below, and the moisture trapped in the enclosed structure beneath the pool, the steel lining and structural members of the cofferdam of the pool have severely deteriorated. Should the pool be considered operational at some future time, expensive repairs would be required. Additionally several supporting structures on the port side of the pool structure were removed during the conversion to accommodate the application of cement on the floor of "D" deck. This removed structural support, adds significantly to the movement of the pool and has created the cracks to the pool cement and tile. This movement appears to be most prevalent when the pool is filled.



**STRUCTURAL FOUNDATION  
UNDER 1<sup>ST</sup> CLASS POOL**

A structural analysis of this area is required to establish the requirements for installation of transverse bulkhead structures deemed necessary.

The Ultrasonic Thickness Measurements for the Swimming Pool Area are:

<u>Area Thickness</u>			
<u>Location</u>	<u>Max</u>	<u>Min</u>	<u>Average</u>
Port Side	0.440	0.070	0.317
Bow Side	0.450	0.375	0.380
Starboard Side	0.370	0.055	0.178
Lower Plate	0.475	0.050	0.366

The minimum thickness readings are from isolated locations,  
around the pool structure.

Amount                      \$ 225,000.00

# QUEEN MARY VESSEL ANALYSIS

## HULL STRUCTURE ANALYSIS

### SUMMARY SHEET

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Mat'l</u>	<u>Labor</u>	<u>Immed</u>	<u>Defer</u>	<u>Total</u>
1.	Breasting structure	2	1,500.00	2,925.00	4,425.00	-----	4,425.00
2.	Propeller Box	1	4,500.00	18,750.00	-----	23,250.00	23,250.00
3.	Internal bilges Frame 300-51	1	630,000.00	2,100,000.00	2,730,000.00	-----	2,730,000.00
4.	Swimming pool	1	65,000.00	200,000.00	-----	265,000.00	265,000.00
				<b>TOTAL</b>	<b>2,734,425.00</b>	<b>288,250.00</b>	<b>3,022,675.00</b>

**Volume III**  
**SECTION VI**

*QUEEN MARY*

VESSEL ANALYSIS

CURRENT  
HULL ANALYSIS  
AND  
REPORT OF FINDINGS

# **QUEEN MARY VESSEL ANALYSIS**

## **CURRENT HULL ANALYSIS AND REPORT OF FINDINGS**

The Hull Structure of the Queen Mary was investigated for purposes of determining the Projected Cost Estimated (PCE) to bring the hull structure up to industry standards. No shore facilities or functions were studied with the exception of mooring lines, gangways and breasting structures.

The hull characteristics of the Hotel Queen Mary since the conversion during the period of 1968-1971 are as follows:

Draft	34.5	Feet
Ship Weight	44,225	Long Tons
Liquid and Ballast	22,501	Long Tons
Total Displacement	66,726	Long Tons

The exterior underwater hull plating (150,000 square feet) and rivets were not inspected by underwater divers due to time restraints and cost restriction.

### **HULL STRUCTURE**

#### **1. A. Hull Exterior - Below Waterline (Drydocking)**

During the conversion period of the Queen Mary, Rados developed a "Hull Corrosion Study" for the Long Beach Queen Mary Department for purposes of determining theoretically the projected amount of plate wastage (deterioration) that would occur during the life of the vessel. The conclusion of the study revealed that within a period of twenty-five (25) years the Queen should be re-drydocked to inspect and repair deteriorated plating, rivets, and plate inserts that have covered the one-hundred (100) sea chest openings. The hull structure should be cleaned, sandblasted, and painted within the next 3 to 5 years.

This "Corrosion Study" took into consideration the cathodic protection system (impressed current) presently existing aboard the Queen Mary which consists essentially of ten (10) rectifiers of which five (5) rectifiers are utilized for protection of ships hull.



**HULL CORROSION - SPLASH ZONE**

In order to drydock the Queen Mary, a portion of the rock dike has to be removed and then again reinstalled along with gangways, connections and mooring lines, etc.

Remove and Reinstall Rock Dike, Gangways, etc.	\$ <u>2,360,000.00</u>
Drydock & Sandblast, Repairs & Paint	\$ <u>3,900,000.00</u>
Amount	\$ <u>6,200,000.00</u>

**B. Hull Exterior - Above Waterline**

The exterior are of the Queen Mary will require painting within a period of 1 to 2 years in order to control the rust and deterioration of structure. Staging will be required to paint sides, superstructure, funnels and mast.

Amount	\$ <u>650,000.00</u>
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### **C. Hull Interior - Bilge Area**

After asbestos containing material is removed from tank tops and bilge areas, cut and remove rusted and deteriorated former boiler foundations. Sandblast and clean area and repair as necessary. Paint total area of bilge up to "D"-Deck and up to "F"-Deck where shell is enclosed. Painting is to include framing, bulkheads, tank facing and interconnected steel work including underside of decks.

Amount

\$ See Section V Item 3

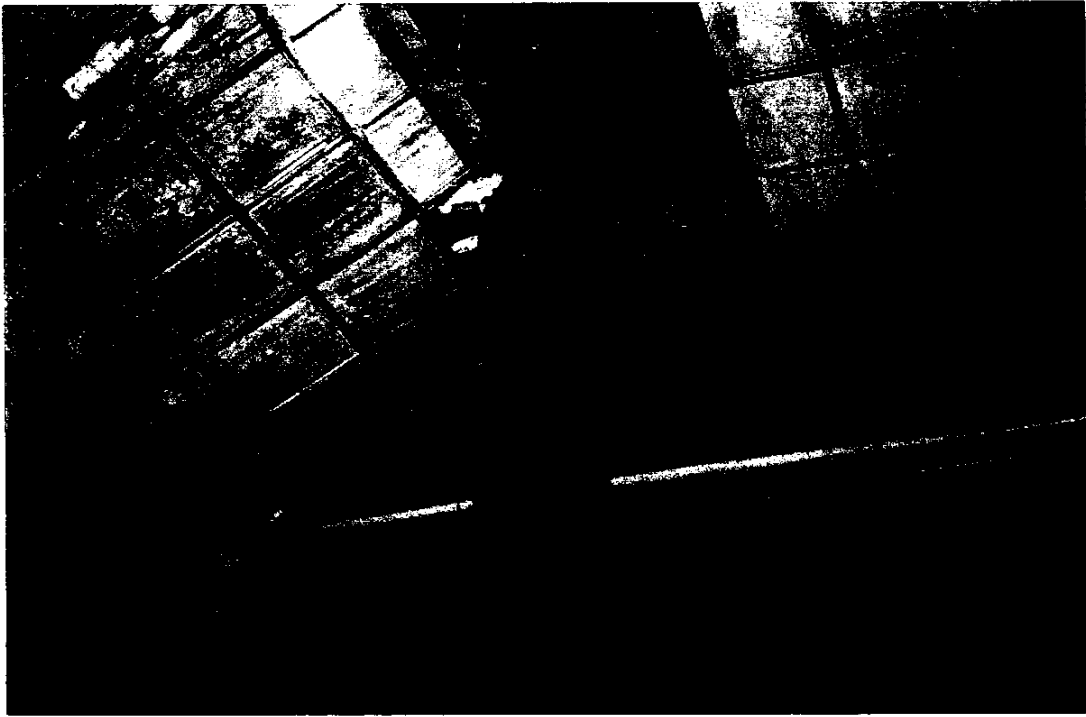
## **2. WATERTIGHT BULKHEADS:**

The Queen Mary was designed and constructed with eighteen (18) watertight bulkheads from the double bottom tanks (tank top) to the "F"-Deck forward (approximately 35 feet high) and "G-Deck Aft (approximately 20 feet high). These structural bulkheads were constructed from .50 inch plate with seven (7) 4'-6" x 18-1/2" I-beams and thirty-five (35) 10" x 7" x 1/2" I-beams spaced in between for stiffeners per bulkhead.

Due to the removal of boilers, generators and machinery during the 1968-71 conversion period, the majority of bulkheads were partially removed to allow space for removal and re-installation of materials and equipment. They were not replaced for structural strength or watertight integrity for reasons of future development of those areas. Presently there exists extensive corrosion to the bulkheads where they come into contact with the contaminated bilges.

As previously mentioned, the Queen Mary has no watertight integrity as required by regulatory bodies for a floating structure. If a certain hull plate or plates became defective and water leaked into the structure it could not be contained due to the present status of the non-watertight bulkheads and therefore the water would flood the whole structure and very probably sink. This major concern is perhaps the most serious condition aboard the ship from a naval architecture point of view.

Presently, the majority of the tank top areas are covered with Asbestos Containing Material (ACM). This is due to the ACM panels that were installed in the uptakes (stack area) to provide for heat retention within the machinery spaces and avoid penetration into the staterooms and other areas. This hazardous material would be required to be removed by a qualified firm prior to any work is preformed in these areas.



### ACM PANELS - UPTAKE

To repair and replace watertight bulkheads only small sections of steel can be used due to limited openings in the hull structure. Extensive amounts of staging would be required to handle and erect the following watertight bulkheads.

Watertight bulkhead 21 is forward of the propeller shaft tunnel. This area appears to have heavy corrosion due to contaminated water, trash and dissimilar metals laying in bilge area. This bulkhead is penetrated by pipes and ducts. The penetration should be blanked-off and four (4) watertight doors installed for watertight integrity.

Watertight bulkhead 87 has a large opening that requires plate replacement and stiffeners. Miscellaneous penetrations are to be blanked-off and two (2) watertight doors installed.

Watertight bulkhead 112 is partially watertight up to the twelve (12) foot flat. Steel plate and stiffeners are to be installed up to the "F"-Deck for watertight integrity. Penetrations to be blanked-off and two (2) watertight doors installed.

Watertight bulkhead 168 has four (4) large open areas at the 11-foot flat that requires re-plating and installation of stiffeners. Piping runs and ventilation duct openings require closures to make watertight. Install one (1) watertight door.

Watertight bulkhead 222 is partially watertight up to the "D"-Deck. Several penetrations are to be blanked-off and collars around bilge pipes and a watertight door is to be installed.

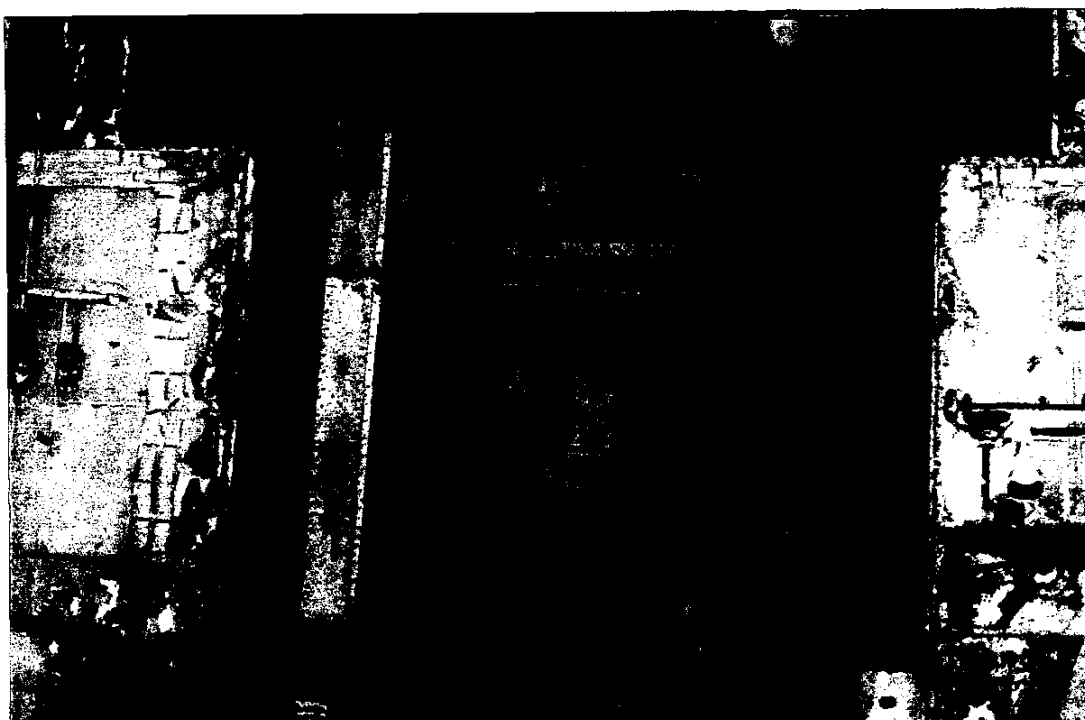
Watertight bulkheads 260 & 311 requires major replacement of plating and stiffeners to "F"-Deck. Installation of a watertight door is required and penetrations blanked-off.

Of the seventeen (17) watertight structural bulkheads in the lower portion of the ship, only two (2) were not modified as a consequence of the conversion modifications. Of the fifteen (15) that were modified, bulkheads 51, 112, 136, 168, 222 and 260 should be repaired/replaced to insure watertight integrity.

Amount      \$ 1,890,500.00



**BULKHEAD 190  
TYPICAL CONVERSION MODIFICATION  
TO WATERTIGHT BULKHEAD**



**REMOVED SECTION  
WATERTIGHT BULKHEAD 244  
LOOKING AFT TO BOILER ROOM No. 2**

**3. EXTERIOR DECKS:**

**A. REPAIR AND REFINISH**

The exterior teak wood decks that have been exposed to the water and weather conditions during the past fifty-six years, have weathered considerably, and caused seepage of moisture through the seams and plugs. This leakage has caused corrosion to the steel decks underneath the wood decking. Even though some of the deteriorated wood has been replaced, it has been reported that leaks appear in compartments below. It is recommended that the balance of the deteriorated teak decks be repaired by removing and replacing of plugs and seam compound and refinishing of the 153,000 square feet of decking.

Amount	<b>\$ <u>710,000.00</u></b>
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**B. REMOVE AND REPLACE:**

1) It is the opinion of the team of engineers that within the next 3 to 5 years the teak-wood decking would be required to be removed and sections of the steel deck plating beneath, be repaired or replaced to eliminate leakage of water into compartments below.

Amount

\$ 2,950,000.00



**SECTION OF REMOVED TEAK DECK  
SHOWING CORRODED STEEL DECK PLATING**



**SPORTS DECK - WEATHERED TEAK DECK**

2) An option to the removal of teak decking and the replacement of sections of the steel plating underneath, is the installation of new teak decking over the existing decks. This method includes the installation of one (1) inch thick teak decking fastened to the existing decks, fastening holes plugged, and caulking of all seams with weatherproof caulking.

Amount                      \$ 1,200,000.00

**C. REPAIRS TO "R" DECK:**

All interior decks have been inspected and are (with the exception of a section of the Galley "R" Deck), in sound and good condition with minimum appearance of corrosion. Vinyl floor tile that exists throughout the decking of the Queen Mary contains Asbestos Material and should be replaced with Non-Asbestos Contained Material. The section of the Galley Deck which has deteriorated, requires replacement due to corrosion from water and electrolysis.

Amount                      \$ 25,000.00

The Ultrasonic Thickness Measurements for the various steel decks are as follows:

**Area Thickness**

<u>Deck</u>	<u>Max</u>	<u>Min</u>	<u>Average</u>
"R"	0.400	0.065	0.250
Sun	0.400	0.075	0.235
Promenade	0.400	0.055	0.267
Main	0.405	0.060	0.385
"A"	0.505	0.475	0.490

The minimum thickness readings are from isolated locations on respective decks.

**4. HULL STRUCTURE EXPANSION JOINTS**

The initial design of the Queen Mary incorporated three (3) expansion joints spaced throughout the length of the ship, to absorb the impact and movement of the ships decks and structures from the motions of heavy seas. These three (3) expansion joints running from port to starboard were installed at frame 145 1/2 on the Sun Deck, frame 180 1/2 on the Sun Deck and frame 228 1/2 on the Sports Deck/Sun Deck. Due to corrosion of the steel trough on the underside of the deck joint, water is leaking into the ballrooms and lower compartments.

It is recommended that the deck cover plates be removed, to sandblast and repair the interior of the steel troughs. New overboard discharge lines to be installed and the cover plates reinstalled.

Amount                      \$ **150,000.00**

**5. ELEVATORS AND ESCALATOR**

It is recommended that the machinery and electrical equipment from seven (7) non-operating elevators be disassembled and removed and replaced with updated components to make fully automated.

The shaft areas of the elevators are coated with Asbestos Containing Material.

This ACM will be required to be removed prior to any performance of work.

One (1) escalator in the convention area has a defective gear box and requires repairs and replacement of parts.

Amount                      \$ 1,925,000.00

6.    **ASBESTOS CONTAINING MATERIAL (ACM)**

An investigation of available information, specifications and plans, and an inspection of the Queen Mary structures was made to determine an approximate extent of Asbestos Containing Material presently existing aboard the vessel.

The following materials and areas contain ACM:

**Wood Paneling:**

In the construction of the Queen Mary in 1936, the Turner Asbestos Cement Company developed a new fireproof panel called "Turnall Composite Board". This panel consists of a plywood layer, a middle layer of asbestos sheet, and a back layer of plywood. A decorative wood panel was applied over the Turnall Board. All the paneling in staterooms, hallways, lounges, restaurants, etc. contain asbestos containing material.



**TYPICAL PANELING SECTION  
PROMENADE DECK, PORT SIDE**





**TYPICAL ASBESTOS INSULATION  
INSIDE WOOD PANELING**

**Ceiling and Wall Insulation:**

Turner Asbestos Cement Company also supplied a "Turnall" asbestos reinforced aluminum foil. This was used to keep temperature fluctuations to a minimum in the center of the structure where boiler up-takes rose through the stacks. There exists unconcealed ACM in the overhead of the boiler rooms, 4" thick spongy blue material sandwiched between steel decks and outer metal or transit coverings.

**Spray-On:**

Spray-on thermal insulation was found in several locations throughout the structure. This material is on fire walls, bulkheads, elevator shafts, support beams, bulkhead penetrations, pipe runs, electrical load centers and on ventilation ducts.

**Engine Room:**

Machinery, equipment, exhaust lines, pipes, and ducting contain Asbestos Containing Material the purposes of reducing temperatures in the engine room areas.

### **Electrical Wire Wrap:**

The older electrical wires originally installed, have an asbestos containing white cloth-like wrap. Abandoned wrapped wires can be found in wooden or metal raceways throughout the ship.

### **Vinyl Floor Tile:**

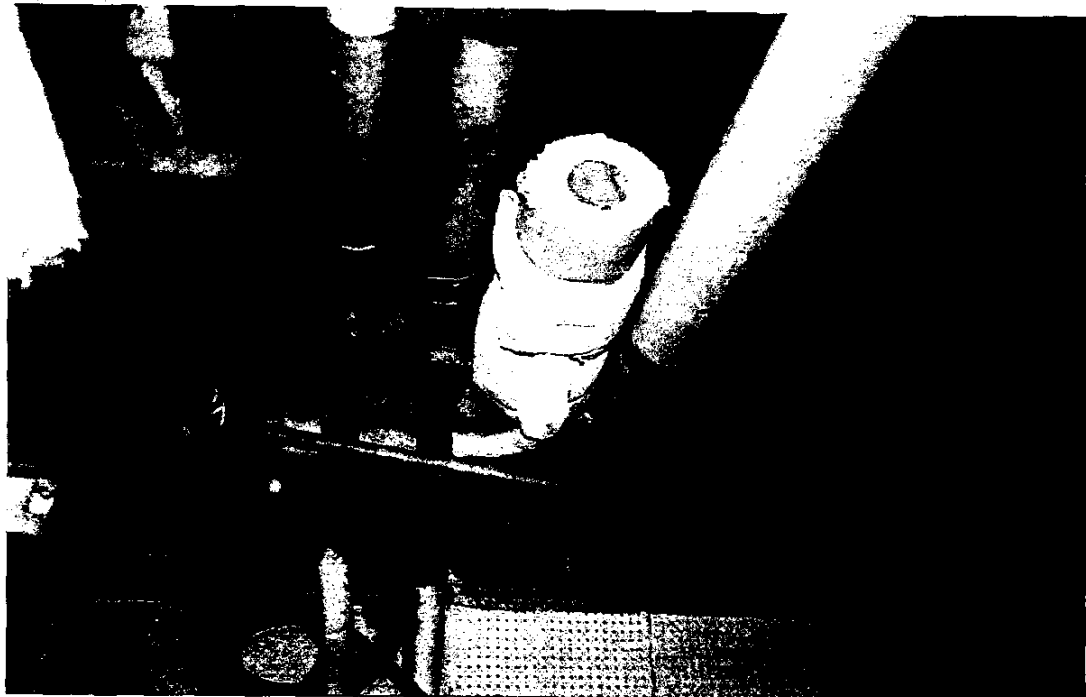
Vinyl floor tile is located in various areas such as lobbies, bathrooms, locker rooms, hallways and kitchens. This floor tile contains asbestos material.

### **Boiler Rooms:**

Presently the 46,000 square foot area in the forward boiler and generator rooms has been closed to the public due to exposure of hazardous materials. It is also closed to the crew except for situations which provide for the wearing of proper apparel.

Substantial amounts of asbestos containing material will be required to be removed from the structure both in the overhead panels as well as from the bilge areas, for continued operation of the Queen Mary and for any modification to the structure complex.

*(Note: This item is covered in Section V, item 3)*



**TYPICAL PIPE LAGGING  
"C" DECK WORKSHOP, PORT SIDE  
VI - 12**

As a result of needed repairs performed on a continual basis to specific areas of the structure and systems, ACM will be required to be removed in those areas.

Requirements of regulatory bodies specify that ACM does not need to be removed in those areas that are left undisturbed, and those where ACM is contained and no airborne particles are present.

Amount                      \$ 2,000,000.00

**7.     Handicap Accessibility**

An inspection of the Hotel Queen Mary revealed a low level of handicap accessibility to most public spaces. Any future modifications to the structure will be required to be in full compliance with the State Building Code for handicap accessibility.

Amount                      \$ 25,000.00

**8.     Occupant Egress**

Signage is to be installed in all passage ways and stairwells to inform occupants of escape routes in case of emergency.

Amount                      \$ 20,000.00

**9.     Pest Control**

Fabricate and install approximately 500 port light, (port-hole) screens to eliminate birds from entering.

Amount                      \$ 8,500.00

**10    Mooring Lines**

The inspection of mooring lines indicate a majority of the wire cables require replacement due to corrosion from the saltwater atmosphere. Investigation of all pad eyes and fittings for repairs and replacement, to be performed.

Amount                      \$ 48,000.00

**11    Life Boats**

Repair of the twenty two (22) steel life boats, replace sections of deteriorated bottoms and repaint.

Amount                    **\$ 100,000.00**

**QUEEN MARY  
VESSEL ANALYSIS**

**HULL ANALYSIS**

**SUMMARY SHEET**

<b>No.</b>	<b>Description</b>	<b>Qty</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Immed</b>	<b>Defer</b>	<b>Total</b>
1.	Hull Exterior (Drydock) A Below waterline					6,200,000.	6,200,000.
	B Above waterline					650,000.	650,000.
	C Bilge areas						SECTION V
2.	Watertight Bulkheads		200,000.	1,690,000.	1,890,500.	-----	1,890,500.
3.	Exterior Deck A Repair & Refinish		150,000.	560,000.		710,000.	710,000.
	B. Remove & Replace		1,400,000.	1,550,000.		2,950,000.	2,950,000.
	C. "R" Deck Repair		5,000.	20,000.		25,000.	25,000.
4.	Hull Expansion Joints		25,000.	125,000.		150,000.	150,000.
5.	Elevators and Escalator					1,925,000.	1,925,000.
6.	Asbestos Containing Material					2,000,000.	2,000,000.
7.	Handicap Accessibility				25,000.		25,000.
8.	Occupant Egress				20,000.		20,000.
9.	Pest Control					8,500.	8,500.
10.	Mooring Lines					48,000.	48,000.
11.	Life Boats					100,000.	100,000.
				<b>TOTAL</b>	<b>1,935,500.</b>	<b>14,766,500.</b>	<b>16,702,000.</b>

**Volume III**  
**SECTION VII**

*QUEEN MARY*

VESSEL ANALYSIS

CURRENT  
MECHANICAL AND PIPING SYSTEMS  
REPORT OF FINDINGS

# **QUEEN MARY VESSEL ANALYSIS**

## **MECHANICAL AND PIPING SYSTEM**

### **INTRODUCTION**

The Mechanical Systems aboard the Queen Mary were designed by the John Brown Shipyard and installed primarily in the year 1934. During the year of 1967, Rados Engineers boarded the vessel during its second to the last Trans Atlantic Crossing for purposes of determining the condition of the Mechanical Systems. It was determined that the Machinery, Boilers, Air Conditioning Units, Sewage and Piping Systems were severely fatigued and deteriorated, and could not withstand the rigorous requirements of incorporating a Hotel, Restaurant, and Museum for the succeeding Thirty (30) year period.

During the conversion engineering of the Queen Mary in 1967, the Air Conditioning/Refrigeration System was re-designed to ultimately service all the spaces on board the ship. A central chill water plant which has the capacity of 2700 tons of cooling is supplied through sixteen-inch chill-water-mains to the ship. The chilled water is supplied from a Central Plant located on land at Pier J and then piped aboard the Queen Mary.

The Steam System is also supplied from the land based Central Plant at Pier J. The system contains 2 - 800 HP water tube boilers capable of producing 27,500 pounds per hour of 150 lb steam.

The Sewage System consists of a 250 cubic foot collection tank serviced by two 5000 gpm sewage pumps, and a 160 cubic foot collection tank serviced by two (2), 200 gpm sewage pumps. PVC pipe has been installed aboard the Queen Mary to replace defective sewage piping. The raw sewage is piped overboard into the City sewer system.

A new Firemain System and Sprinkler Heads were installed during the conversion of the vessel to withstand City pressure requirements.

The Gas Line installed to service the galley's and other special requirements aboard the ship, also originates from city gas lines.

## **I. Mechanical & Piping Systems**

Since the installation of the mechanical and piping systems in 1968-1971 a minimum of maintenance has been performed on the equipment and piping systems. The equipment and majority of systems after being in operation for the past twenty two years will require major repairs or replacement of equipment and systems. The following information is submitted on the various mechanical and piping systems.

### **A. Central Chill-Water Plant and Steam Plant.**

The central on-shore energy plant has been designed to provide 2700 tons of refrigeration to the Q.M./Spruce Goose complex as mentioned in the introduction, in addition to a co-generation plant located near the ITS container facility, which is capable of producing 500 tons of refrigeration to the Spruce Goose dome. The 2700 ton capacity plant is provided by three (3) 800 ton units and one (1) 325 ton unit.

According to figures provided by the current tenant, Disney, the maximum refrigeration load during peak periods has been approximately 800 tons, thus only one of the 800 ton units is needed at any one time to provide for the demand and the rest of the units are on stand-by. Alternating the 800 ton units periodically will provide even wear and tear, and also keeps all units in service.

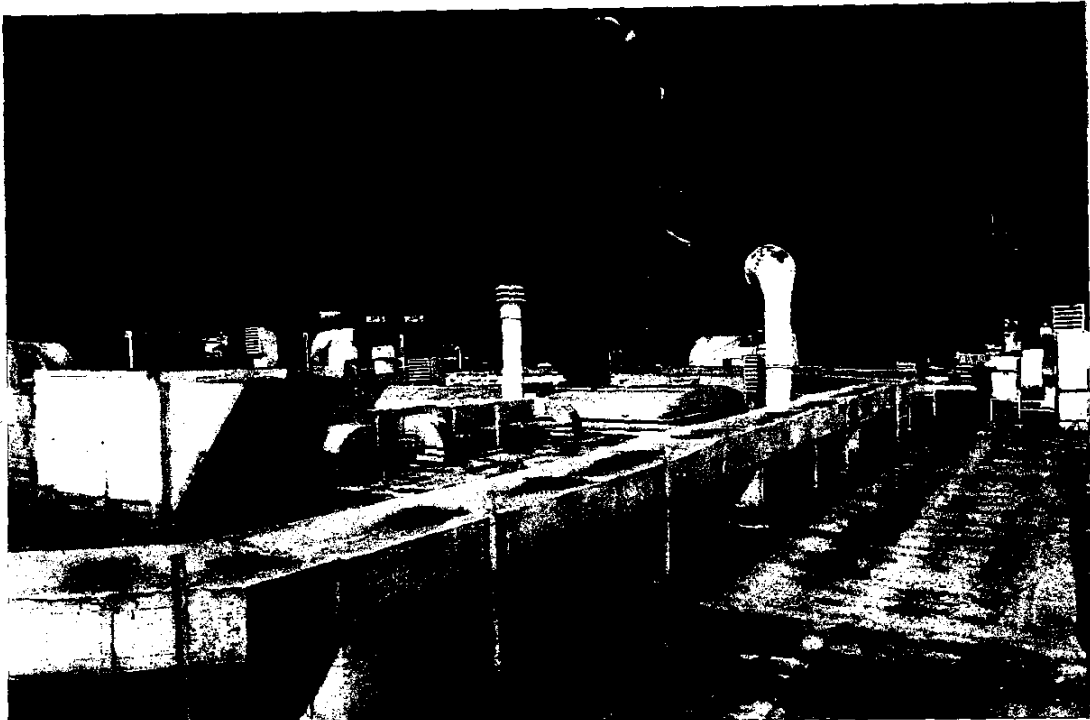
Steam supply to the Queen Mary is provided by two (2) 800 H.P. water tube boilers located at the central plant with a capacity of 27,500 #/STM/HR @ 150 PSI.

In summary, the central energy plant is more than adequate and in good condition.

### **B. Heating, Ventilation and Air Conditioning - Existing Repairs**

Due to the limited time frame available, the mechanical survey of shipboard HVAC equipment consisted of a search and review of as-built drawings and diagrams, operating procedures, and a spot-check examination of the supply and exhaust fans, air handling units, fan coil units, chilled water cooling coils, steam heating coils and their associated components.





### **HEATING, VENTILATION AND AIR CONDITIONING DUCTING AND COMPONENTS**

The approximate total of units presently installed on board the Queen Mary are as follows: (some are disconnected and/or not used).

- a. Air Handlers = 33
- b. Fan Coil Units = 24
- c. Supply Fans = 75
- d. Exhaust Fans = 74

Due to the age of the equipment and the limited maintenance schedule, the following conditions prevail on an average basis, and are typical for the majority of the 206 HVAC Systems.

1. Air Handlers

- a. Excessive corrosion exists around the unit casing and cooling coils (especially units exposed to the weather).
- b. Condensate drain pans are corroded and some plugged not allowing proper drainage.
- c. Flexible duct connectors have perforations and holes, and in some cases are torn or in a deteriorated condition.

- d. Air filters and cooling coil fins are excessively dirty. This greatly reduces air flow.
- e. Chilled water piping at many units have missing and/or deteriorated thermal insulation, decreasing efficiency.

## 2. Fan Coil Units

- a. Air filters and cooling coils are excessively dirty. In a few units the air filters are missing.
- b. Condensate drain pans are corroding and some are plugged not allowing drainage.
- c. Chilled water piping at many units have missing and/or deteriorated thermal insulation.

## 3. Supply Fans

- a. Intake screens are very dirty and in some cases 60% or more clogged with dirt and/or paint which severely restricts the air flow and efficiency.
- b. Systems that have heating and/or cooling coils have clogged or missing air filters.
- c. Flexible rubberized canvas duct connectors have holes, and in some cases are torn or in a deteriorated condition.
- d. Noisy bearings and out of balance fan wheels cause excessive vibration.



**SUPPLY FAN AT FRAME 178**

#### 4. Exhaust Fans

- a. Fans installed in weather locations show a lot of corrosion and a need for general clean up maintenance.
- b. Flexible rubberized canvas duct connectors have holes, and in some cases are torn or in a deteriorated condition.
- c. Noisy bearings and out of balance fan wheels cause excessive vibration.
- d. Most of the exhaust fans installed in the weather, discharge vertically with no rain protection. Recommend installing goosenecks in these locations.

#### 5. System Upgrade

To upgrade air conditioning for existing Hotel spaces a total of (18) new Fan Coil Units and their associated piping are to be installed in the following locations:

- a. Royal State Rooms  
M-121, M-125, M-131, M-135, M-139 and M-141
- b. Mini Suites  
A-007, A-008, A-125, B-317, B-318, B-424, B-4425,  
M-017 and M-018
- c. Suites  
M-102, M-104 and M-106

Amount (1 Thru 5):      \$ 726,200.00

#### C. Heating, Ventilation and Air Conditioning - System Replacement

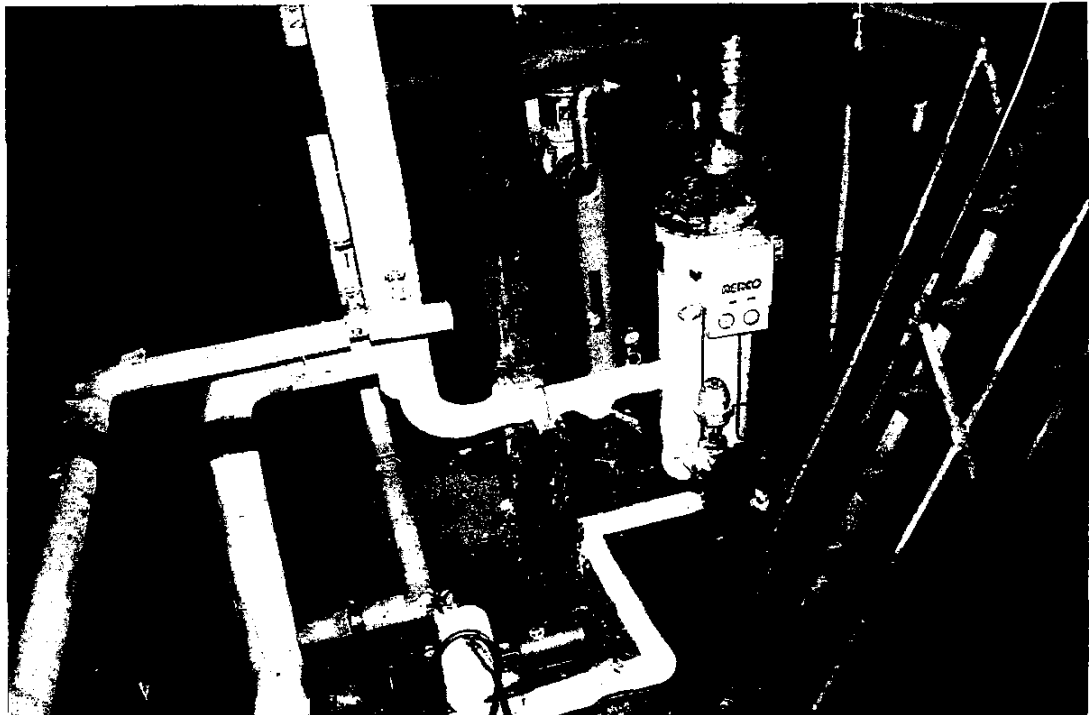
Due to the age of the equipment and limited maintenance performed, a scheduled replacement of the air handlers, fan coil units, supply fans, and exhaust fans should be undertaken within the next 3 to 5 years.

Amount                      \$ 2,450,000.00

#### D. Sewage System

The Ships Sewage is collected throughout the Ship and led to three collection tanks, two located on "F" Deck, Port and Starboard. Each has a capacity of 1870 gallons (250 cu. ft.). Two 500 gpm sewage pumps service each of these tanks. The

third tank is located on "G" Deck at frame 65 centerline and has a capacity of 1197 gallons (160 cu. ft.). This tank is serviced by two 200 gpm pumps which discharge to the Long Beach City sewer system.



**SEWAGE SYSTEM  
"F" DECK, PORT SIDE**

a) Pumps

Pumps appear to be in good condition, and this is borne out by maintenance personnel. Due to the length of time in use, pumps should be overhauled completely to avoid future problems.

b) Valves

Some sewage system valves show signs of past leaks, others were leaking at the time of inspection, although not seriously. All valves in this system should be refurbished with new gaskets, seats, etc.

c) Piping

Piping seems to be generally in good condition with a few leaks noted. Some PVC pipe has been replaced with copper pipe. Piping is not

adequately supported by pipe brackets in some areas, particularly in the sewage tank room.

Amount                      \$ 223,000.00

#### E. Steam System

Steam is supplied to the vessel from two 800 H.P. boilers located in the central energy plant on shore for comfort heating, water heating and some cooking equipment.



**PENETRATION POINT  
FOR MAIN STEAM LINE ENTERING SHIP**

##### a) Valves

A large portion of the valves throughout the steam system have either leaks through the bonnet or flanges and have deteriorating or missing insulation. Some valves are "frozen". Balancing valves are generally in poor shape and should be either repaired and calibrated or replaced and calibrated. All valves should be checked for proper operation. Pneumatic valve control tubing should be tested, pressures verified and gages calibrated then re-installed.

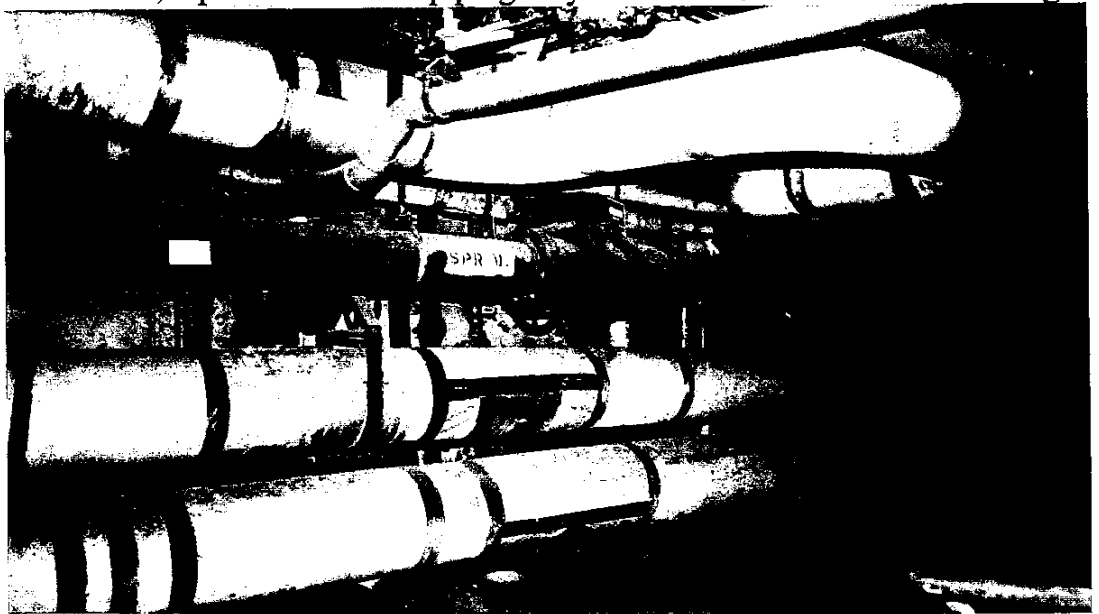
b) Piping

Steam lines not exposed cannot be assessed for wear without removing insulation, but many sections have insulation missing, exposing leaks and extremely corroded conditions. These conditions occur throughout the ship and in various sizes.

Amount                      \$ 150,000.00

F. Firemain System

The Firemain and Sprinkler Systems are served from the shore by separate lines. Both systems after many years of use, should be flushed and hydrostatically pressure tested in their entirety plus perform any other test required by the Long Beach Fire Department. Results of these tests will help determine the condition of the systems and the extent of repairs to be made. Should these tests indicate extensive rework, replacement of all piping may be more cost effective for the long term.



**FIREMAIN AND SPRINKLING MAIN  
AT POINT OF HULL PENETRATION**

There is presently at least 40 feet of firemain which has developed leaks. This is an indication that further problems will arise in the future, due to the deterioration of the piping.

a) Sprinkler System

Some of the sprinkler heads (approximately 20 percent) are damaged to some extent, and must be replaced. All valves should be checked for leakage and proper operation.

Amount                      \$ 475,000.00

b) Replace Firemain System

Due to the age of firemain system and the appearance of water leaks, it is recommended that the firemain be replaced during the next 3 to 5 years. Since the firemain piping penetrates asbestos containing materials, a qualified ACM firm will be required to remove hazardous materials from overhead and side partitions.

Amount                      \$ 1,950,000.00

G. Gas Line

The natural gas line serving the Q.M. at present seems to be generally in good condition, but there are some portions on the tower which should be checked by the Gas Company which services the facility.

Amount                      \$ 5,000.00

H. Water (Hot/Cold) System

Water is supplied to the vessel from shore via two (2) 6" hoses at "C" Deck. These hoses appear to be in good condition except for an accumulation of marine growth. The hoses should be cleaned and their condition assessed to determine if replacement should be made. A set of spare umbilicals should be made up as specified in part 8 of this report, so that in case of emergency, down time is minimal.

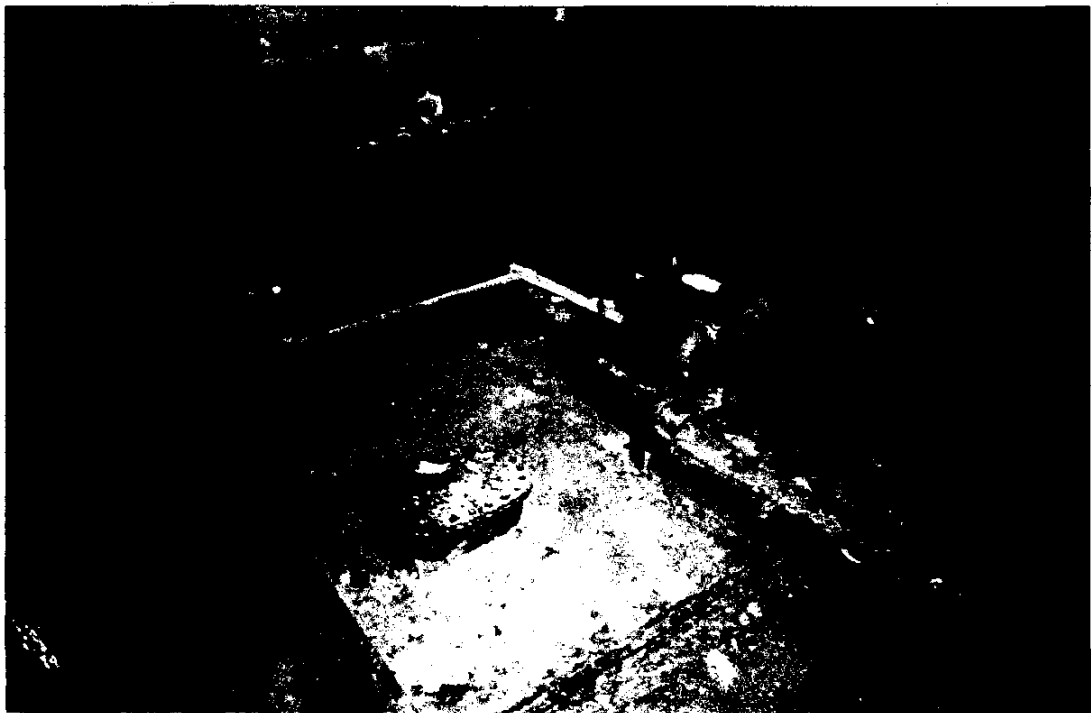
Hot water is served by two Aerco instantaneous water heaters using steam as the heating medium. The piping in the heater spaces appears to be in good condition except for some insulation missing which was being repaired at the time inspection was made.

Water piping is in fair to good condition, but requires a pressure test to locate leaks and defective piping. Control valves not operating properly should be overhauled or replaced. Insulation is missing on some hot water piping.

Amount                      \$ 202,000.00

#### I. Bilge System

The Bilge System, consisting of a main line which runs Fore and Aft with branch lines to various areas of the bilges, is served by three (3) pumps, one (1) forward and one (1) amidship, both on the Port side of the vessel, and one (1) Aft on the Starboard side of the vessel. Two emergency diesel pumps are also located on the ship about "G" Deck level, however only one is connected.



**BILGE PIPING WITH BRANCH LINES TO SUMPS**

##### a) Pumps

Bilge system pumps (3) have been overhauled and are in good working condition per maintenance people. Rados International Corporation personnel did not observe the pumps in operation. The forward emergency diesel pump at frame 225 is in good condition and is connected to the bilge main and to the ballast system, but a second diesel pump Fwd has not been connected.



b) Piping

Piping installed during the conversion is PVC mixed with steel, and in fair to good condition. All bilge wells are clean and have water to cover the suction strainer. Bilge piping forward of frame 260 is badly corroded, with some sections completely rusted out, making the system inoperative. Some piping has been replaced at some of the bilge wells. Watertight bulkheads which could ordinarily isolate various areas of the bilges are non-existent, subjecting the ship to total flooding in case of a catastrophic disaster.



**PART OF BILGE PIPING SYSTEM**

c) Valves

Bilge suction valves in some areas are "frozen" making them inoperable. All valves must be overhauled to assure they are in proper working order.

Amount	\$ <u>283,000.00</u>
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#### J. Ballast System

The ballast system presently installed on the ship is connected to the bilge main-header and utilizes the bilge pumps to transfer water to and from 12 individual valved wing tanks, 6 starboard and 6 port. However, this system is not being used. Ballasting is accomplished by using a hosed fill line from the ship's Fire Main into the tanks on "D" deck, and drained by gravity to the sea.

The ballast system as it is now connected lacks the flexibility to make it a viable system. This problem can be corrected by adding seven (7) valves and two (2) short lengths of pipe, which would allow transfer to and from any two tanks.

Amount                      \$ 82,000.00

#### K. Deck Drains

Inspections have revealed that some deck drains are partially or completely plugged. It is recommended that the drain pipes be cleaned out to insure free flow from point of origin to terminating point. Provide and install strainer plates at scupper intakes to keep out foreign material and debris.

Further investigations show that several drain pipes have rusted through as a result of the corrosive atmosphere. In order to contain this water from overflowing or entering interior bulkheads and/or overheads, it is recommended that these drain pipes be replaced in areas where pipes have rusted through.

Amount                      \$ 60,000.00

#### L. Fire Detection System

The Fire Detection System is outdated and parts are no longer available. The system was last tested in 1990 with few problems reported. However, with limited access and reduced maintenance crews, the possibility exists for a fire to go undetected until it can become a threat to the vessel and the lives of tourist or crew.

It is our recommendation that the Fire Detection System be replaced at this time.

Detailed studies would have to be conducted, but calculating on a square foot area, the cost would be approximately

Amount                      \$ 300,000.00

**M. Public Address System**

The P.A. System is outdated as the Fire Detection System, and is not in total working order. This system would be necessary to guide people from the vessel in case of an emergency.

It is our recommendation that this system be replaced at this time.

Detailed studies would have to be conducted, but calculating on a square foot area, the cost would be approximately

Amount                      \$ 150,000.00

**N. Miscellaneous**

Replacement of the lavatories in the Capstan Club men's restroom.

Spare hoses utilized for the ship to shore umbilicals, should be made in case of rupture of an existing hose. Should that occur, a spare hose can be immediately put into operation without a costly and timely delay occurring.

An inventory of valves, fittings, pipe, belts, motors, filters, etc., which are more likely to be required, should be provided. Input from maintenance personnel can establish the correct inventory.

Amount                      \$ 200,000.00

**QUEEN MARY  
VESSEL ANALYSIS**

**MECHANICAL**

**SUMMARY SHEET**

<b><u>No.</u></b>	<b><u>Description</u></b>	<b><u>Qty</u></b>	<b><u>Mat'l</u></b>	<b><u>Labor</u></b>	<b><u>Immed</u></b>	<b><u>Defer</u></b>	<b><u>Total</u></b>
A.	H.V.A.C.-Existing Repairs		399,700.	326,500.	726,200.		726,200.
B.	H.V.A.C.-System Replaced					2,450,000.	2,450,000.
C.	Sewage System		49,000.	174,000.		223,000.	223,000.
D.	Steam System		45,000.	105,000.		150,000.	150,000.
E.	Firemain System		100,000.	375,000.	475,000.		475,000.
F.	Firemain Replace					1,950,000.	1,950,000.
G.	Gas Line		1,000.	4,000.		5,000.	5,000.
H.	Hot/Cold Water		40,000.	162,000.		202,000.	202,000.
I.	Bilge System		63,000.	220,000.		283,000.	283,000.
J.	Ballast System		27,000.	55,000.		82,000.	82,000.
K.	Deck Drains		15,000.	45,000.		60,000.	60,000.
L.	Fire Detection System					300,000.	300,000.
M.	Public Address System					150,000.	150,000.
N.	Miscellaneous					200,000.	200,000.
				<b>TOTAL</b>	<b>1,201,200.</b>	<b>6,055,000.</b>	<b>7,256,200.</b>

**Volume III**  
**SECTION VIII**

*QUEEN MARY*

VESSEL ANALYSIS

CURRENT  
ELECTRICAL SYSTEMS  
REPORT OF FINDINGS

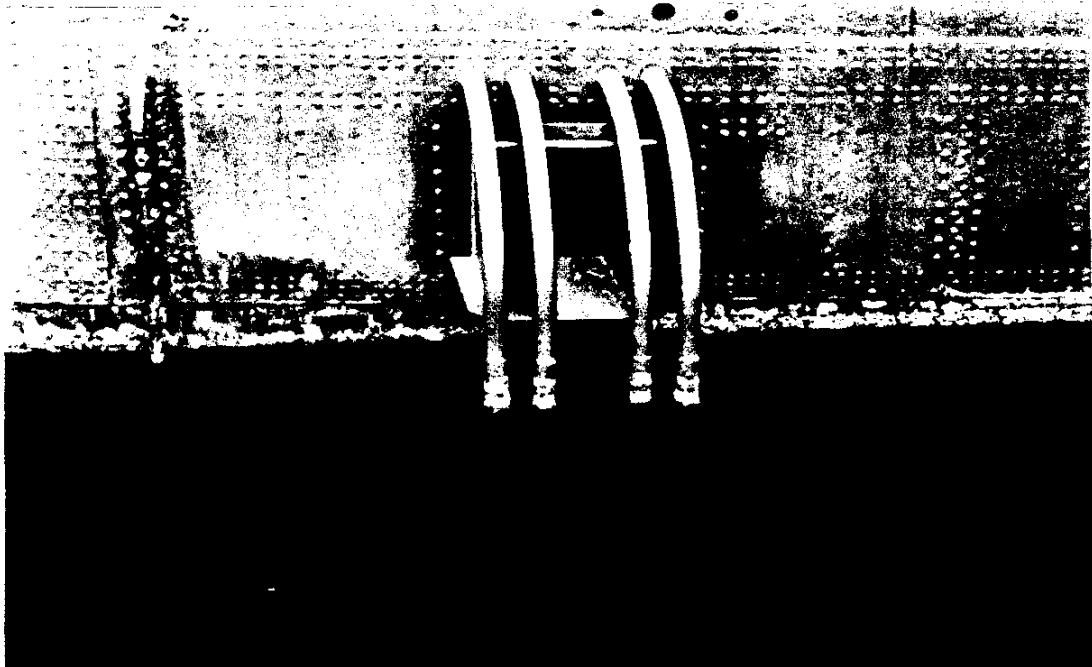
# **QUEEN MARY VESSEL ANALYSIS ELECTRICAL SYSTEM**

## **INTRODUCTION**

The Queen Mary Electrical System was designed and installed by John Brown Shipyards, Clydebank, Scotland during the period of 1934 - 1935. The Ships Generators, Switchboards, Controllers, Motors and Wiring were designed and installed for direct-current (DC) use. Upon inspection of the Electrical System in 1967, it was determined due to defective wire insulation, wooden distribution boxes, outdated transformers and switchboard panels and aged generators, that the installation of a new electrical systems using alternating-current (AC) aboard the Queen Mary would be required and power use would be provided by Southern California Edison Company.

The feeder lines are connected to two (2) 3750 K.V.A. (Kilo Volt Amp) transformers for a total available capacity of 7500 K.V.A.. These transformers have 12,000 volt primary and 4160 volt secondary capacities.

Power is supplied to the structure at 4160 volts by two (2) main feeders. Each one of the feeders can carry the existing load, thus providing redundancy in the event of failure of one of the feeders.



**MAIN ELECTRICAL SUPPLY FEEDERS TO SHIP  
VIII - 1**

At the structure, the voltages are stepped down from 4160 to 480 volts at each of the thirteen (13) transformers.

Electrical Substation No. 2 feeds all equipment connected to the Emergency Power Network in the facility. In the event of shore power failure, emergency power is supplied by a Delco Diesel Generator, 500 K.V.A., 480, 3 phase, 60 HZ Delta connection located on "B" deck at frame 19. The emergency power available is utilized primarily for lighting, but includes four (4) sewage pumps and two (2) bilge pumps.

There is an existing spare 750 K.V.A. transformer available for use in the event of failure of existing transformers.

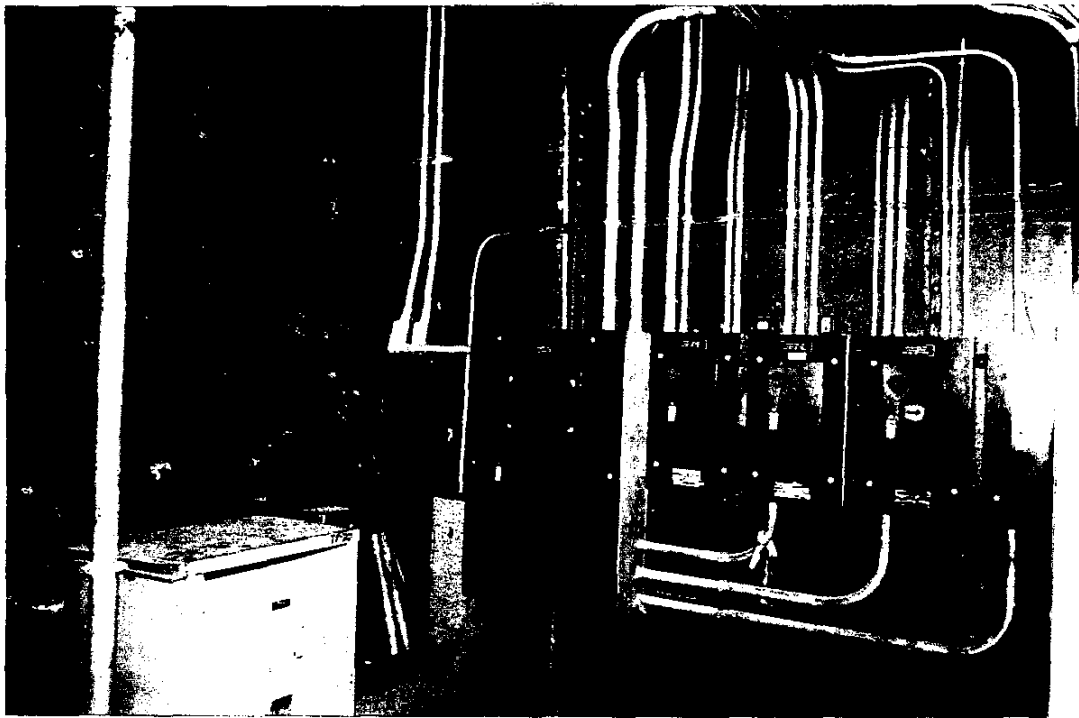
### **ASSUMPTIONS AND LIMITATIONS**

1. The current connected power (available power) for the facility is 7500 KVA (Kilo Volt Amp).
2. The current demand of the facility, taken from reports aboard the vessel, is approximately 2039 KVA or 27% of the total connected capacity.
3. The field research for this report did not include verification of connections for cables or busbars made in the main distribution panels, distribution panels and cable to cable.

### **CONCLUSION**

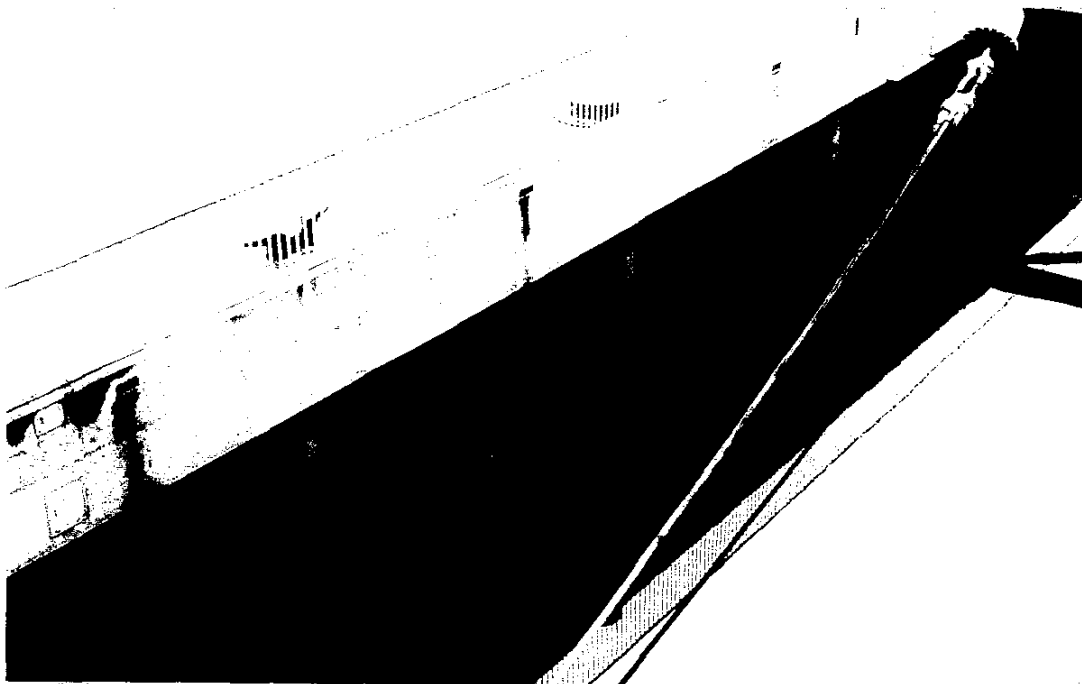
An important goal of the electrical survey was to verify the existence of proper protective devices on the system. Equipment that cannot withstand or interrupt excessive loads, is subject to damage or destruction and poses a threat to surroundings.

Investigations revealed that most of the equipment has the proper overcurrent ratings on the protective devices. Also, there are ground fault indicators throughout the facility which in general are operational. These indicators allow identification of those distribution panels with current leakage that need to be maintained or repaired.



**TRANSFORMER, DISTRIBUTION AND POWER PANEL**

Power is supplied to the Ship by Southern California Edison. These power lines are under utilized at the present and, additional loads can be accommodated with modifications or additional expense.



**PIER SIDE ELECTRICAL MAIN FEEDERS  
FEEDING SHIP  
VIII - 3**



The maximum load on any of the thirteen (13) substation transformers located at the facility do not exceed 30% of their capacity. At the present there is no demand charge (fee for under utilizing equipment). However, this condition could change at the discretion of SCE. Should demand charges be required in the future, modifications to the electrical distribution system would be recommended to minimize charges.

Some of the equipment associated with each substation includes:

- |                              |               |
|------------------------------|---------------|
| 1) Distribution panel boards | 5) Capacitors |
| 2) Transformers              | 6) Cables     |
| 3) Disconnects               | 7) Conduit    |
| 4) Circuit Breakers          | 8) Motors     |

In general the electrical equipment is approximately (20) twenty years old and in fair condition. However, the main breaker at each of the thirteen (13) load centers are no longer manufactured. Finding parts for replacement is difficult. We recommend the replacement of all the main breakers.

Most of the breakers have not been tested internally to ensure proper operation when needed. We recommend infrared testing and mechanical testing for breakers 200 AMPS or larger.

The existing emergency generator should be tested under a full load condition to ensure proper operation when needed.

All of the electrical rooms have only one exit. We recommend the installation of an additional exit at each location housing a main distribution panel in order to provide an alternate exit as required by code.

Some of the most frequent problems encountered throughout the facility are:

- |                                |              |
|--------------------------------|--------------|
| a) Inadequate lighting -       | 70 locations |
| b) Oversized breakers -        | 10 locations |
| c) Exposed connections -       | 4 locations  |
| d) Deteriorated equipment -    | 6 locations  |
| e) Equipment inaccessibility - | 10 locations |

**A. Electrical System Repairs:**

1. Emergency Generator service, repair and check-out.

Amount                      \$ **15,000.00**

2. Install a second exit in all electrical rooms.

Amount                      \$ **7,575.00**

3. The following list describes the deficiencies, categorized by substation.

**A. Substation No. 1 L.C. B-114-2**

- Replace main circuit breaker
- Setting on main circuit breaker is 1600 A. Reset to 800 A.

**B. Substation No. 2 L.C. B-19-2E (Emergency)**

- Replace main circuit breaker
- Complete Emergency system test
- Panel 1319 "S" Deck - service area around unit
- Panel 1323 "C" Deck - panel lighting

**C. Substation No. 3 L.C. A-112-2**

- Replace main circuit breaker
- Panel 715 "R" Deck - panel lighting

**D. Substation No. 4 L.C. B-112-2**

- Replace main circuit breaker

**E. Substation No. 5 L.C. F-85-2**

- Replace main circuit breaker
- Panel 523, 523B, 526 & 527 poor condition, replace
- Lighting at panels, 8 locations
- Panel 510 is not accessible

**F. Substation No. 6 L.C. S-107-2**

- Replace main circuit breaker
- Substation in poor physical condition, refurbish

- One oversized circuit breaker, replace
  - Lighting at panels, 9 locations
  - Ventilation at panel 1227 and 1240
- G. Substation No. 7 L.C. M-100-1
- Replace main circuit breaker
  - Panel 604, 200 AMP circuit breaker, 135 AMP wire
  - Lighting at panels, 10 locations
- H. Substation No. 8 L.C. F-165-2
- Replace main circuit breaker
  - Lighting at panels, 6 locations
- I. Substation No. 9 L.C. M-230-1
- Replace main circuit breaker
  - Circuit breaker ratings panel 363 & 386, replace
  - Lighting at panels, 12 locations
- J. Substation No. 10 L.C. B-19-2
- Replace main circuit breaker
  - Service area around panel 1319
  - Lighting at panels, 5 locations
- K. Substation No. 11 L.C. P-143-1
- Replace main circuit breaker
  - Circuit breaker ratings, 4 locations, replace
  - Panel 1124, poor physical condition
- L. Substation No. 12 L.C. SP-202-2
- Replace main circuit breaker
  - Service area around panels, 4 locations
  - Lighting at panels, 13 locations
  - Ventilation, panel 114
- M. Substation No. 13 L.C. R-241-2
- Replace main circuit breaker
  - Circuit breaker rating, panel 241, replace

- Exposed connections, 3 locations
- Lighting at panels, 6 locations
- Service area around panel, 2 locations

Amount                      \$ 98,825.00

The maintenance aboard the vessel is ongoing and some items listed above may have been corrected by the time the Port of Long Beach reaches a decision as to the disposition of those items. However, the information in this report is accurate at the time of the investigation on the vessel.

### **ESTIMATED COSTS (MODIFICATIONS AND REPAIRS)**

The following pages contain the estimated costs to accomplish the necessary modifications and repairs.

The large majority of repairs fell into a finite number of similar repair type requirements allowing several portions of the scope to be estimated with general allowance type costs. Specialized repairs were treated separately.

This estimate was prepared without the benefit of any formalized engineering such that scope assumptions had to be employed as to layout, method, material specifications and setup.

Estimating unit manhour productivity was derived with consideration for the fact that the work is to be performed in discrete locations separated in space such that production type installation is impossible.

Some basic assumptions are as follows:

- Lighting fixture additions will intercept existing circuits.
- Improperly sized circuit breakers shall be replaced.
- Inadequately ventilated electrical rooms will have exhaust fans installed.
- Load center main circuit breaker replacements will be Westinghouse molded case type.

**QUEEN MARY  
VESSEL ANALYSIS**

**ELECTRICAL**

**SUMMARY SHEET**

<b><u>No.</u></b>	<b><u>Description</u></b>	<b><u>Qty</u></b>	<b><u>Mat'l</u></b>	<b><u>Labor</u></b>	<b><u>Immed</u></b>	<b><u>Defer</u></b>	<b><u>Total</u></b>
1.	Emergency Generator Repair and Service		5,000.	10,000.	15,000.		15,000.
2.	Electrical Sub-Stations and Auxiliaries		65,900.	32,925.	98,825.		98,825.
3.	Second Exits in Electrical Rooms		3,575.	4,000.		7,575.	7,575.
				<b>TOTAL</b>	<b>113,825.</b>	<b>7,575.</b>	<b>121,400.</b>

**Volume III**  
**SECTION IX**

*QUEEN MARY*

VESSEL ANALYSIS

MAINTENANCE COSTS FOR  
THE HULL STRUCTURE,  
MECHANICAL AND PIPING SYSTEMS,  
AND ELECTRICAL SYSTEMS

# **QUEEN MARY VESSEL ANALYSIS**

## **VESSEL MAINTENANCE**

### **INTRODUCTION**

The importance of an established preventative maintenance program is an area that cannot be overstated. During the years of operation following the conversion there was some confusion between the leasee and the City/Port regarding maintenance responsibility. This confusion and the lack of a definitive maintenance schedule caused the general deterioration of the vessel.

This condition eased somewhat after the Disney Corporation acquired the lease of the facilities, a maintenance program was established and many needed repairs were performed. However, even an efficient repair and maintenance program cannot overcome numerous years of neglect. As a result, a major renovation program is required to upgrade these systems and structure that have received little attention before a maintenance program can be effective.

The purpose of this section is to address those areas requiring consideration in developing a preventative maintenance program. The items listed in this section represent some of the items which must be incorporated into the program, but does not represent a complete list.

In the outline of a maintenance program, it has to be assumed that at least some of the items of renovation have been completed, since a maintenance program cannot effectively deal with the labor and logistics of major renovations or improvements.

It should be pointed out that the deterioration rate of a structure floating in salt water, with all interior areas open and subject to the effects of the salt water environment, is not significantly different from that of an operating vessel. The major difference being that an operating vessel has a large crew that maintains the vessel around the clock.

Based upon the existing conditions and uses aboard the Queen Mary structure, the following maintenance cost for Hull Structure, Machinery, Piping, and Electrical Systems are as follows:

## **HULL AND STRUCTURAL MAINTENANCE**

Maintenance of the hull, internal structural members, bulkheads, deck plating, wood paneling, wood decking, and inspection of rigging, utilizes both a scheduled maintenance and a mandatory periodic visual inspection of all exposed surfaces and structures which are non-mechanically and non-electrically related.

During the construction of the vessel which began in 1931, the creation of thousands of compartments both large and small were constructed within the shell of the hull and the superstructure. Many of these compartments have been neglected especially in the lower and after sections of the vessel.

Maintenance of the structural portion of the vessel is comprised mainly of re-painting of the steel and wood elements of the ship and in some cases, sandblasting or hydroblasting prior to the recoating. In view of the square footage located between the thirteen (13) decks and including the exterior masts, funnels, deck equipment and life boats, the task is significant in scope. The maintenance of the painting and upkeep of the loading ramps and gangways, the breasting structures, mooring lines/cables and visual inspections of the cathodic protection system including readings from it's six rectifiers are included in the maintenance program.

Included in the hull maintenance is the lubrication of staying wires and cables, tightening of loose nuts and bolts, removal of debris, replacement of defective overhead panels, and the ordering and stocking of appropriate maintenance materials.

Prior to any repairs to machinery, piping, or electrical systems, the hull maintenance group might be required to remove existing panels or like interferences in order to allow the mechanical and electrical maintenance groups to perform their maintenance tasks.

In determining the maintenance cost for the Hull and Structure Group, it is assumed that all the immediate and deferred items listed in Section VI are completed and therefore the following minimum amount of labor and materials are required.

LABOR	\$ <u>600,000.00</u>	
MATERIAL	\$ <u>1,425,000.00</u>	
	TOTAL	\$ <u>2,025,000.00</u>

If the immediate and deferred items are *not* completed the maintenance cost would be as follows:

LABOR	\$ <u>1,261,850.00</u>	
MATERIAL	\$ <u>2,788,150.00</u>	
	TOTAL	\$ <u>4,050,000.00</u>



## **MECHANICAL SYSTEM MAINTENANCE**

All mechanically operated system components and devices must be serviced periodically on a scheduled basis to insure the accurate, dependable and satisfactory performance required of the components and controls. Proper operating condition of components and systems, affects not only the system's operation but more importantly the useful life of the component. Because of the salt water environment, some items need more frequent attention, especially those open to the weather.

The large amounts of mechanically operated system components aboard the Queen Mary along with the varied types and sizes of units, present a tremendous maintenance challenge. Practically all spaces of the 1,018' long by 118' wide vessel, along with the thousands of compartments located within the thirteen (13) decks, contain serviceable system components.

Those emergency systems that affect the safety of personnel aboard the vessel such as the Fire Protection System and the Public Address System, require special attention so that in case of emergency, the prevention of injury and the loss of life is minimized. The successful performance of emergency related systems in actual emergencies, provides psychological comfort to guest and personnel and limits the legal exposure to owners and operators. Other mechanical systems such as the Environmental Control System (ECS), the Sewage System and the Compressed Air System while vitally as important for the successful day to day operation, do not demand the high degree of responsibility and accuracy of system maintenance.

In implementing an effective maintenance program, it is essential that responsible maintenance be performed by knowledgeable, qualified, and dedicated maintenance personnel. Many problems that are encountered are the result of responsible maintenance decisions as opposed to lack of system knowledge.

The following systems and their components require scheduled maintenance and system testing as required by the manufacturer of each system component which obviously vary, and comprise the estimated costs as follows:

- a). Firemain & Sprinkling System and Alarm System
- b). Valves & Piping
- c). Bilge System
- d). Sewage System
- e). Compressed Air System
- f). Environmental Control System (HVAC)

1. Chill Water System
2. Steam System
3. Pneumatic Controls/Actuators
4. Air Handling
5. Fan Units
6. Compressors/Condenses

- g). Hot and Cold Fresh Water System  
h). Public Address System

Prior to any repairs to the machinery, piping systems, the hull maintenance group would be required to remove wood paneling and like interferences to allow the mechanical maintenance group to perform their maintenance tasks. The group would also be required to order and stock appropriate maintenance materials. The testing and inspection of all systems is included.

In determining the maintenance cost for the Mechanical Group, it is assumed that all the immediate and deferred items listed in Section VII are completed and therefore the following minimum amount of labor and materials are required:

LABOR	\$ <u>817,825.00</u>		
MATERIAL	\$ <u>1,952,333.00</u>		
		TOTAL	\$ <u>2,770,158.00</u>

If the immediate and deferred items are *not* completed the maintenance cost would be as follows:

LABOR	\$ <u>2,523,710.00</u>		
MATERIAL	\$ <u>3,016,260.00</u>		
		TOTAL	\$ <u>5,540,000.00</u>

## ELECTRICAL ESTIMATED COSTS

The following list represents the minimum required maintenance for the electrical system and components. As a developing Preventative Maintenance Program is initiated, items peculiar to a specific vessel will arise and should be added to the Maintenance Program. This list is derived from industry practice and ANSI/IEEE recommended practice and is comprised of the following:

### ANNUAL

- Circuit breaker cleaning, testing, inspection and tightening.
- Emergency generator for full load 2 hr test.
- Infrared testing of circuit breaker loading.

### TRI-ANNUAL

- Circuit breaker cleaning, testing, inspection and tightening.
- Emergency generator full load 2 hr. test.
- Infrared testing of circuit breaker loading.
- Ground detector light functional check.
- Ground resistance continuity check.
- Test Transformer Insulation (duble testing).
- Conductor insulation testing.
- Motor control center checkout and large motor overload tests.

The estimated costs for all of the above maintenance was derived from documents and report aboard the vessel. Circuit breaker detailed testing, is to be performed on all breakers 200 AMPS and larger. Cleaning and visual inspection will be performed on all circuit breakers on a load center basis.

Test and inspection prices were derived from documents and reports aboard the vessel.

LABOR	\$ <u>38,175.00</u>
MATERIAL	\$ <u>20,000.00</u>

TOTAL	\$ <u>58,175.00</u>
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**QUEEN MARY  
VESSEL ANALYSIS**

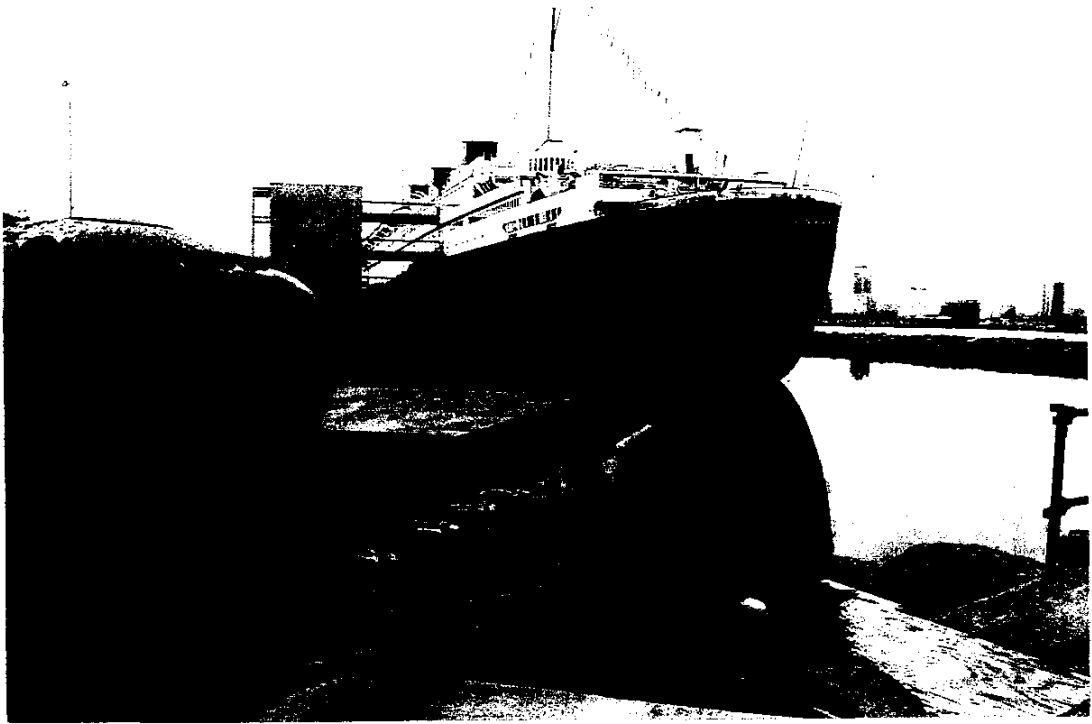
**MAINTENANCE COSTS**

**SUMMARY SHEET**

<b>No.</b>	<b>Description</b>	<b>Qty</b>	<b>Material</b>	<b>Labor</b>	<b>Total</b>
1.	Hull Structure		1,425,000.00	600,000.00	2,025,000.00
2.	Mechanical Piping Systems		1,952,333.00	817,825.00	2,770,158.00
3.	Electrical System		20,000.00	38,175.00	58,175.00
<b>TOTAL</b>			<b>3,397,333.00</b>	<b>1,456,000.00</b>	<b>4,853,333.00</b>

Maintenance is by nature, "Deferred", however ignored maintenance will become major repair items later.

The Material costs listed above, include those items for which outside contractors must be used.



**MOORING LINES/CABLES**



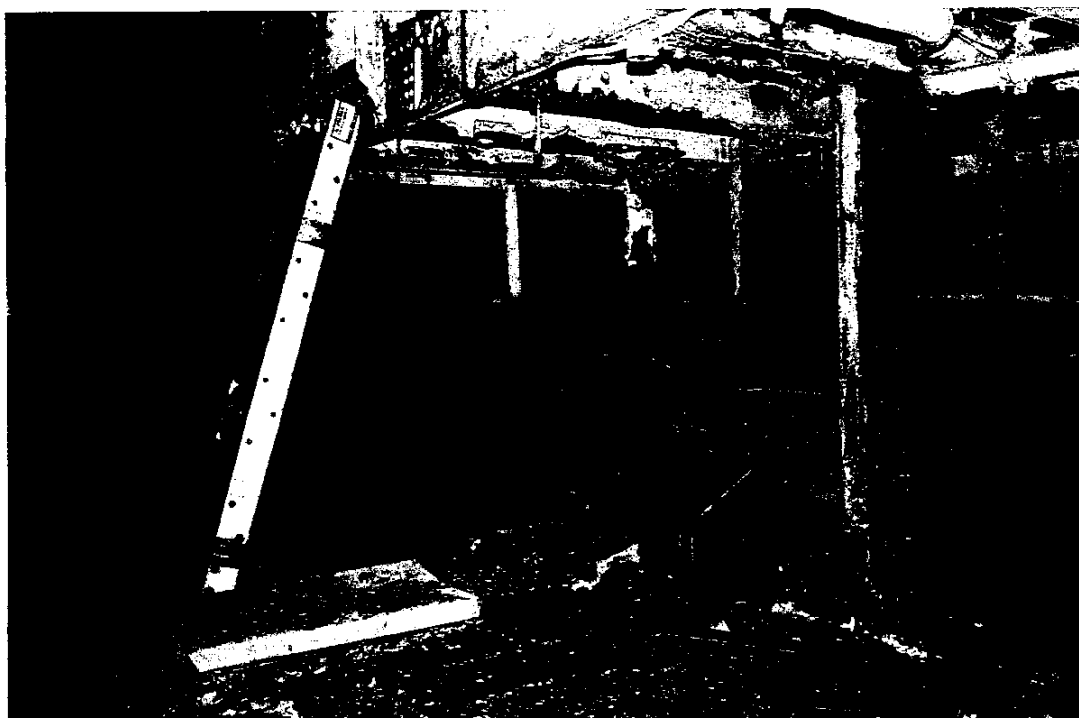
**EMERGENCY EXIT GANGWAY**



TYPICAL  
EXPANSION  
JOINT



"R" DECK  
PASSAGEWAY  
PORT SIDE



**FUNNEL No.1 UPTAKE - "D" DECK, PORT SIDE**



**PASSAGEWAY, "F" DECK TO "E" DECK, POST SIDE, AFT**



**BILGE AREA, PORT SIDE, AFT**



**SHAFT BILGE AREA, STBD SIDE**



**Volume III**  
**SECTION X**

*QUEEN MARY*

VESSEL ANALYSIS

ALTERNATIVE USES FOR  
THE QUEEN MARY

# **QUEEN MARY VESSEL ANALYSIS**

## **ALTERNATE USES**

Economics Research Associates has been authorized by the City of Long Beach to develop alternative use concepts for the Hotel Queen Mary complex. Rados International Corporation has investigated the following concepts and are submitting a rough order of magnitude for design and construction.

**Alternative No. 1 Night-time Entertainment Center**

**Alternative No. 2 Card Club Combined with Entertainment Center**

**Alternative No. 3 Shore Based Maritime Museum with Mini-Tour of Ship**

The following narrative on the revised alternative uses is separated into the three options as listed above. The "fit-out" would include: interior finishes, floors, walls, ceilings, all furnishing, fixtures, equipment, and props and dressings. These cost estimates were provided by entertainment cost consultant David Holtz. The "structural" would include those costs to develop the area to be fitted.

### **Alternative No. 1 Night-Time Entertainment Center**

1. The Observation Lounge would be converted into a 4600 square foot Music Club, Jazz. No structural changes are required. Engineering services required.

A. Engineering Services	\$ 4,500.
B. Fit-Out: (Holtz)	\$ 460,000.00

<b>TOTAL</b>	<b>\$ <u>464,500.00</u></b>
--------------	-----------------------------

2. The Queen's Lounge would be converted into a 4600 square foot dinner theater. The wood paneling and dommed ceiling are far too unique and will not be changed. There will be no structural changes required.

A. Engineering Services	\$ 2,000.00
B. Fit-Out: (Holtz)	\$ 480,000.00

TOTAL	\$ <u>482,000.00</u>
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3. The Royal Salon, combined with the King's View Room would be converted into a 4000 square foot sports bar.

- A. Structural changes to remove 33-42 feet of bulkhead and between the two spaces.

This bulkhead is a primary structural member and therefore, it will be replaced with a longitudinal girder and retain the two web frame supports.

Material	\$ 5,000.00
Labor	\$ 20,000.00

A. Total	\$ 25,000.00
B. Fit-Out: (Holtz)	\$ 500,000.00

TOTAL	\$ <u>525,000.00</u>
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4. The Wedding Chapel, combined with the Victorian Room would be converted into a 3300 square foot Magic Club.

- A. Structural Changes to remove 30 feet of bulkhead between the two spaces.

This bulkhead is a primary structural member and therefore, it will be replaced with a longitudinal girder and retain the web frame supports.

Material	\$ 4,000.00
Labor	\$ 19,000.00

A. Total	\$ 23,000.00
B. Fit-Out: (Holtz)	\$ 363,000.00

TOTAL	\$ <u>386,000.00</u>
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5. The Prom Cafe and Lounge, 4100 square feet, will be retained but the theme and decor will be changed.

A. Engineering Services	\$ 3,850.00
B. Fit-Out: (Holtz)	\$ 600,000.00

TOTAL	\$ <u>603,850.00</u>
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6. The Chelsea Restaurant, 2000 square feet, would be retained but the theme and decor will be changed.

A. Engineering Services	\$ 2,000.00
B. Fit-Out: (Holtz)	\$ 300,000.00

TOTAL	\$ <u>302,000.00</u>
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7. The Britannia Salon would be converted into a 9000 square foot Comedy Club.

A. Engineering Services	\$ 4,500.00
B. Fit-Out: (Holtz)	\$ 990,000.00

TOTAL	\$ <u>994,500.00</u>
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8. The Veranda Grill would be converted into a 4000 square foot Music and Dance Club.

A. Engineering Services	\$ 2,500.00
B. Fit-Out: (Holtz)	\$ 400,000.00

TOTAL	\$ <u>402,500.00</u>
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9. The Sun Deck Museum Area, 15000 square foot, will be retained. About 10% of the display area and displays will be changed. Renovate all displays, clean and paint area.

\$ 200,000.00

10. The Sir Winston Room, 3500 square foot, will be retained and refit.

A. Engineering Services	\$ 5,000.00	
B. Refit, Refresh, Interior Decor	\$ 75,000.00	
Upgrade Kitchen Equip & Paint	\$ 75,000.00	
	<b>TOTAL</b>	<b>\$ <u>155,000.00</u></b>

11. Promenade Deck Retail Shops (11,000 square feet).

- Retain Shops in Piccadilly Circus
- Enlarge Shops, Port Side, with displays and doors to Promenade Deck.

- a) "Royal Insignia" (men's store) and "Bit of Britain" (souvenir shop) have been enlarged and are open to the promenade.
- b) "Royal Crystal" shop can be enlarged by deleting bulkheads at frame 243 and 246 to include the spaces now used as a men's restroom and an unassigned office.

Note: A large vent trunk (approx 6' x 6') penetrating through should not be disturbed.

Enlarge the door opening to the promenade at frame 241.

Replace door at frame 247 with display window and add two more windows to frame 250.

Add display windows to promenade between frames 236-239, to passage between frames 243-246.

New shop area (including existing storage) approximately 925 square feet. (Net gained; about 350 square feet)

A. Structural Mods	\$ 60,000.00
B. Basic Interior	\$ 30,000.00
(Not including Tenant improvement)	

**TOTAL** **\$ 90,000.00**

12. Enlargement options - Add 300 square feet of dining to Sir Winston Room. Aft, outboard, corner, port and starboard of this space, there are bulkheads around the mast shrouds. This space, port and starboard, could be opened up for use by shortening the shrouds and re-attaching to new chain plates on the extended deckhouse structure.

A. Srtuctural/Rigging	\$ 75,000.00
B. Fit-Out:	\$ 75,000.00

TOTAL      \$ 150,000.00

GRAND TOTAL:      \$ 4,949,550.00

**Alternative No. 2 - Card Club combined with Entertainment Center.**

The items listed in Alternative No. 1 would be the same for this alternative with the exception of item No. 1, the Observation Lounge would be converted into a Comedy Club and No. 6 the Britannia Salon would be converted into a Card Club. The following is a list of only those changed items.

1. The Observation Lounge would be converted into a 4600 square foot Comedy Club. No structural changes are required.

A. Engineering Services	\$ 5,000.00
B. Fit-Out: (Holtz)	\$ 506,000.00

TOTAL      \$ 511,000.00

6. The Britannia Salon would be converted into a 9000 square foot Card Club.

A. Engineering Services	\$ 10,000.00
B. Fit-Out: (Holtz)	\$ 1,080,000.00

TOTAL      \$ 1,090,000.00

**Alternative No. 3 - Maritime Museum Ashore with Mini-Tour on the vessel.**

A. Engineering Services	\$ 6,000.00
B. Re-Fit	\$ 44,000.00

TOTAL      \$ 50,000.00

The configuration of the Queen Mary to be modified to incorporate the following alternative uses.

**Alternative No. 1 Night-time Entertainment Center**

Amount	<b>\$ <u>4,809,550.00</u></b>
With Enlargment Option	<b>\$ <u>4,959,550.00</u></b>

**Alternative No. 2 Card Club Combined with Entertainment Center**

Amount	<b>\$ <u>4,939,550.00</u></b>
With Enlargment Option	<b>\$ <u>5,089,550.00</u></b>

**Alternative No. 3 Shore Based Maritime Museum with Mini-tour of Ship**

Amount	<b>\$ <u>50,000.00</u></b>
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# QUEEN MARY VESSEL ANALYSIS

## ALTERNATE USES

## SUMMARY SHEET

<u>No.</u>	<u>Description</u>	<u>Engr</u>	<u>Structural</u>	<u>Fit-Out</u>	<u>Total 1</u>	<u>Total 2</u>
1.	Observation Lounge Music Club, Jazz	4,500.00		460,000.00	464,500.00	
2.	Queen's Lounge Dinner Theater	2,000.00		480,000.00	482,000.00	482,000.00
3.	Royal Salon Sports Bar		25,000.00	500,000.00	525,000.00	525,000.00
4.	Wedding Chapel Magic Club		23,000.00	363,000.00	386,000.00	386,000.00
5.	Prom Cafe & Lounge Theme	3,850.00		600,000.00	603,850.00	603,850.00
6.	Chelsea Restaurant Theme	2,000.00		300,000.00	302,000.00	302,000.00
7.	Brittania Salon Comedy Club	4,500.00		990,000.00	994,500.00	
9.	Sun Deck Museum Renovate				200,000.00	200,000.00
10.	Sir Winston Room Renovate	4,200.00		200,000.00	204,200.00	204,200.00
11.	Prom Deck Retail Add and Renovate		60,000.00	30,000.00	90,000.00	90,000.00

*Continued Next Page*



<u>No.</u>	<u>Description</u>	<u>Engr</u>	<u>Structural</u>	<u>Fit-Out</u>	<u>Total 1</u>	<u>Total 2</u>
1.	Observation Lounge Comedy Club	5,000.00		506,000.00		511,000.00
7.	Brittania Salon Card Club	10,000.00		1,080,000.00		1,090,000.00
			<b>TOTAL</b>		<b>4,605,350.00</b>	<b>4,735,350.00</b>
	<b>OPTION-</b> Enlarge Sir Winston Room		75,000.00	75,000.00		<b>150,000.00</b>

**Volume III**  
**APPENDIX "A"**

*QUEEN MARY*

VESSEL ANALYSIS

SUPPORT MATERIAL  
FOR  
HULL and STRUCTURE  
MACHINERY and PIPING  
ELECTRICAL

## *Economics Research Associates STUDY TOTALS*

<b>SECTION</b>	<b>DESCRIPTION</b>	<b>IMMEDIATE</b>	<b>DEFERRED</b>	<b>TOTAL</b>
<b>I</b>	Summary	0.00	0.00	0.00
<b>II</b>	Introdution To Rados Intl corp	0.00	0.00	0.00
<b>III</b>	History of Queen Mary	0.00	0.00	0.00
<b>IV</b>	Analysis of Sept 26, 1990 Study	2,095.00	1,850.00	3,945.00
<b>V</b>	Analysis of Dec 1990 Study	2,734,425.00	288,250.00	3,022,675.00
<b>VI</b>	Hull Analysis and Report of Findings	674,500.00	14,766,500.00	15,441,000.00
<b>VII</b>	Mechanical and Piping Report of Findings	1,201,200.00	6,055,000.00	7,256,200.00
<b>VIII</b>	Electrical Report of Findings	113,825.00	7,575.00	121,400.00
		<b>\$4,726,045.00</b>	<b>\$21,119,175.00</b>	<b>\$25,845,220.00</b>
<b>IX</b>	Maintenance Costs	Per Year	<b>4,853,333.00</b>	<b>4,853,333.00</b>
		<b>ENLARGE OPTION</b>	<b>ALTERNATIVE 1</b>	<b>ALTERNATIVE 2</b>
<b>X</b>	Alternative Uses	<b>\$150,000.00</b>	<b>\$4,809,550.00</b>	<b>\$4,939,550.00</b>

## HULL and STRUCTURE

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b><u>Deck Buckling "A" Deck</u></b>						
1	Install Stanchion			1,000	1,095	2,095	
	<b>TOTAL</b>					<b>\$2,095</b>	
	<b><u>Deck Buckling "C" Deck</u></b>						
1	Replace Deck Plating			850	1,000	1,850	
	<b>TOTAL</b>					<b>\$1,850</b>	
	<b><u>Breasting Structure</u></b>						
1	Sandblast and Re-coat					4,425	
	<b>TOTAL</b>					<b>\$4,425</b>	
	<b><u>Propeller Box</u></b>						
1	Clean and Reweld			2,000	21,250	23,250	
	<b>TOTAL</b>					<b>\$23,250</b>	
	<b><u>Hull Bilges</u></b>						
1	ACM Removal					780,000	
2	Clean, Sandblast and Paint			20,000	1,930,000	1,950,000	
	<b>TOTAL</b>					<b>\$2,730,000</b>	
	<b><u>Indoor Swimming Pool</u></b>						
1	Pool Structural Analysis					225,000	
	<b>TOTAL</b>					<b>\$225,000</b>	

## HULL and STRUCTURE

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b><u>Drydocking</u></b>						
1	Remove & Reinstall Dyke					2,360,000	
2	Drydock, Sandblast, Repair & Paint					3,900,000	
	<b>TOTAL</b>					<b>\$6,260,000</b>	
	<b><u>Hull Exterior Above Waterline</u></b>						
1	Staging and Paint					650,000	
	<b>TOTAL</b>					<b>\$650,000</b>	
	<b><u>Watertight Bulkheads</u></b>						
1	Repair and Replace					629,500	
	<b>TOTAL</b>					<b>\$629,500</b>	
	<b><u>Exterior Decks</u></b>						
1	Repair and Refinish					710,000	
	<b>TOTAL</b>					<b>\$710,000</b>	
	<b><u>Exterior Decks</u></b>						
1	Remove and Replace					2,950,000	
	<b>TOTAL</b>					<b>\$2,950,000</b>	
	<b><u>Sports Deck Teak Deck</u></b>						
1	New Deck					1,200,000	

## HULL and STRUCTURE

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b>TOTAL</b>					<b>\$1,200,000</b>	
	<b><u>"R" Deck Repair</u></b>						
1	Vinyl Tile and Deck					25,000	
	<b>TOTAL</b>					<b>\$25,000</b>	
	<b><u>Expansion Joints</u></b>						
1	Clean, Repair and Paint					150,000	
	<b>TOTAL</b>					<b>\$150,000</b>	
	<b><u>Elevator and Escalators</u></b>						
1	Repair and Renew					1,925,000	
	<b>TOTAL</b>					<b>\$1,925,000</b>	
	<b><u>Asbestos Containing Material</u></b>						
1	Remove and Clean					2,000,000	
	<b>TOTAL</b>					<b>\$2,000,000</b>	
	<b><u>Handicap Accessibility</u></b>						
1	Modifications					25,000	
	<b>TOTAL</b>					<b>\$25,000</b>	
	<b><u>Occupant Egress</u></b>						

## ***HULL and STRUCTURE***

<i><b>No.</b></i>	<i><b>DESCRIPTION</b></i>	<i><b>Qty</b></i>	<i><b>Units</b></i>	<i><b>Mat'l</b></i>	<i><b>Labor</b></i>	<i><b>Total</b></i>	<i><b>Remarks</b></i>
1	Signage					20,000	
	<i><b>TOTAL</b></i>					<i><b>\$20,000</b></i>	
	<u><b>Pest Control</b></u>						
1	Screens					8,500	
	<i><b>TOTAL</b></i>					<i><b>\$8,500</b></i>	
	<u><b>Mooring Lines</b></u>						
1	Repair and Replace					48,000	
	<i><b>TOTAL</b></i>					<i><b>\$48,000</b></i>	
	<u><b>Life Boats</b></u>						
1	Clean Repair and Paint					100,000	
	<i><b>TOTAL</b></i>					<i><b>\$100,000</b></i>	
	<i><b>TOTAL</b></i>					<i><b>\$19,587,620</b></i>	

## ***MACHINERY SUMMARY***

<b><i>No.</i></b>	<b><i>DESCRIPTION</i></b>	<b><i>Total</i></b>	<b><i>Remarks</i></b>
1	Heating Ventilation and Air Conditioning	726,200	
2	Chilled Water System	208,000	
3	Hot and Cold Water System	202,000	
4	Steam System	150,000	
5	Natural Gas System	5,000	
6	Bilge System	283,000	
7	Ballast System	82,000	
8	Deck Drains	60,000	
9	Sewage System	223,000	
10	Firemain and Sprinkling System	475,000	
11	Replace Firemain and Sprinkling System	1,950,000	
12	Firemain Detection System	300,000	
13	Public Address System	150,000	
14	Miccelleneous	200,000	
	<b><i>TOTAL</i></b>	<b><i>\$5,014,200</i></b>	

**Machinery Totals**



## ***MACHINERY and PIPING***

<b>No.</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>Units</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Total</b>	<b>Remarks</b>
<b><u>Heating Ventilation and Air Conditioning</u></b>							
1	Replace Air Handlers	8	Each	180,000	50,000	230,000	
2	Repair and Clean Air Handlers	18	Each	10,800	56,000	66,800	
3	Replace Fan Coil Units	6	Each	18,000	10,000	28,000	
4	Repair and Clean Fan Coil Units	13	Each	3,900	6,500	10,400	
5	Replace Supply Fans	10	Each	25,000	8,000	33,000	
6	Repair and Clean Supply Fans	50	Each	10,000	25,000	35,000	
7	Replace Exhaust Fans	10	Each	20,000	8,000	28,000	
8	Repair and Clean Exhaust Fans	50	Each	10,000	25,000	35,000	
9	Replace Coils	50	Each	50,000	20,000	70,000	
10	Duct Cleaning and Misc Repair	1	Each	25,000	75,000	100,000	
11	Material Handling	1	Each	10,000	15,000	25,000	
12	New Fan Coil Units For Hotel Spaces	18	Each	37,000	28,000	65,000	
	<b>TOTAL</b>					<b>\$726,200</b>	
<b><u>Chilled Water System</u></b>							
1	Chilled Water Valves	200	Each	20,000	40,000	60,000	
2	Chilled Water Piping and Fittings	500	Feet	25,000	50,000	75,000	
3	Chilled water Insulation	500	Feet	1,000	3,000	4,000	
4	C/W & Steam for New Fan Coil Units	18	Each	18,000	36,000	54,000	
5	Umbilical	2	Each	5,000	10,000	15,000	
	<b>TOTAL</b>					<b>\$208,000</b>	
<b><u>Hot and Cold Water System</u></b>							
1	Valves	200	Each	25,000	52,000	77,000	
2	Piping	2000	Feet	25,000	60,000	85,000	
3	Insulation	2000	Lin Ft	10,000	30,000	40,000	
	<b>TOTAL</b>					<b>\$202,000</b>	

## ***MACHINERY and PIPING***

<b>No.</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>Units</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Total</b>	<b>Remarks</b>
	<b><u>Steam System</u></b>						
1	Valves	300	Each	20,000	40,000	60,000	
2	Piping	1000	Feet	15,000	50,000	65,000	
3	Insulation	1000	Lin Ft	5,000	10,000	15,000	
4	Umbilical	2	Each	5,000	5,000	10,000	
	<b>TOTAL</b>					<b>\$150,000</b>	
	<b><u>Natural Gas System</u></b>						
1	Inspect and Repair	1	Sys.	1,000	4,000	5,000	
	<b>TOTAL</b>					<b>\$5,000</b>	
	<b><u>Bilge System</u></b>						
1	Pumps	3	Each	15,000	25,000	40,000	
2	Piping	-	Each	70,000	100,000	170,000	
3	Valves	15	Each	30,000	43,000	73,000	
	<b>TOTAL</b>					<b>\$283,000</b>	
	<b><u>Ballast System</u></b>						
1	Valves	7	Each	21,000	30,000	51,000	
2	Piping	-	Feet	6,000	25,000	31,000	
	<b>TOTAL</b>					<b>\$82,000</b>	
	<b><u>Deck Drains</u></b>						
1	Clean	200	Each	5,000	30,000	35,000	
2	Strainer Plates	200	Each	10,000	15,000	25,000	

## MACHINERY and PIPING

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
	<b>TOTAL</b>					<b>\$60,000</b>	
	<b><u>Sewage System</u></b>						
1	Overhaul Sewage Pumps	6	Each	8,000	10,000	18,000	
2	Valves Overhaul/Replace	50	Each	30,000	60,000	90,000	
3	Piping	500	Lin Ft	35,000	80,000	115,000	
	<b>TOTAL</b>					<b>\$223,000</b>	
	<b><u>Firemain and Sprinkling System</u></b>						
1	Firemain and Sprinkling	1	Sys.	100,000	375,000	475,000	
	<b>TOTAL</b>					<b>\$475,000</b>	
	<b><u>Replace Firemain and Sprinkling System</u></b>						
1	Firemain and Sprinkling Replace	1	Sys.	600,000	1,350,000	1,950,000	
	<b>TOTAL</b>					<b>\$1,950,000</b>	
	<b><u>Fire Detection System</u></b>						
1	Console and detectors	1	Sys.			300,000	
	<b>TOTAL</b>					<b>\$300,000</b>	
	<b><u>Public Address System</u></b>						
1	Console and periphails	1	Sys.			150,000	
	<b>TOTAL</b>					<b>\$150,000</b>	
	<b><u>Miscellaneous</u></b>						

## MACHINERY and PIPING

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
1		1		75,000	125,000	200,000	
	<b>TOTAL</b>					<b>\$200,000</b>	

## ***ELECTRICAL SUMMARY***

<b><i>No.</i></b>	<b><i>DESCRIPTION</i></b>	<b><i>Total</i></b>	<b><i>Remarks</i></b>
1	Substation and Connected Auxiliaries	98,825	
2	Second Electrical Room Exits	7,575	
3	Emergency Generator Repair and Service	15,000	
	<b><i>TOTAL</i></b>	<b><i>\$121,400</i></b>	

**Electrical Totals**

## ELECTRICAL

No.	DESCRIPTION	Qty	Units	Mat'l	Labor	Total	Remarks
<b>Substation and Connected Auxiliaries</b>							
1	Substation No.1 C.B. 600AF	1	Each	2,700	225	2,925	
2	Substation No.1 General	1	Each	150	100	250	
3	Substation No.2 C.B. 800AF	1	Each	2,700	225	2,925	
4	Substation No.2 General	1	Each	150	600	750	
5	Substation No.3 C.B. 1200AF	1	Each	4,500	225	4,725	
6	Substation No.3 General	1	Each	150	400	550	
7	Substation No.4 C.B. 1000AF	1	Each	4,500	225	4,725	
8	Substation No.4 General	1	Each	50	100	150	
9	Substation No.5 C.B. 1200AF	1	Each	4,500	225	4,725	
10	Substation No.5 General	1	Each	2,400	3,800	6,200	
11	Substation No.6 C.B. 1000AF	1	Each	4,500	225	4,725	
12	Substation No.6 General	1	Each	1,400	1,700	3,100	
13	Substation No.7 C.B. 1200AF	1	Each	4,500	225	4,725	
14	Substation No.7 General	1	Each	1,100	4,100	5,200	
15	Substation No.8 C.B. 1600AF	1	Each	4,500	225	4,725	
16	Substation No.8 General	1	Each	600	2,400	3,000	
17	Substation No.9 C.B. 1600AF	1	Each	4,500	225	4,725	
18	Substation No.9 General	1	Each	1,400	5,000	6,400	
19	Substation No.10 C.B. 1000AF	1	Each	4,500	225	4,725	
20	Substation No.10 General	1	Each	500	2,200	2,700	
21	Substation No.11 C.B. 1600AF	1	Each	4,500	225	4,725	
22	Substation No.11 General	1	Each	900	800	1,700	
23	Substation No.12 C.B. 1600AF	1	Each	4,500	225	4,725	
24	Substation No.12 General	1	Each	1,400	5,800	7,200	
25	Substation No.13 C.B. 1600AF	1	Each	4,500	225	4,725	
26	Substation No.13 General	1	Each	800	3,000	3,800	
				65,900	32,925		
	<b>TOTAL</b>					<b>\$98,825</b>	

## ***ELECTRICAL***

<b><i>No.</i></b>	<b><i>DESCRIPTION</i></b>	<b><i>Qty</i></b>	<b><i>Units</i></b>	<b><i>Mat'l</i></b>	<b><i>Labor</i></b>	<b><i>Total</i></b>	<b><i>Remarks</i></b>
	<b><u>Exits</u></b>						
1	Second Electrical Room Exit	13	Each	3,575	4,000	7,575	
	<b><i>TOTAL</i></b>					<b><i>\$7,575</i></b>	
	<b><u>Emergency Generator</u></b>						
1	Service, Check-Out and Repair	1	Each	5,000	10,000	15,000	
	<b><i>TOTAL</i></b>					<b><i>\$15,000</i></b>	

## **ALTERNATIVE USES STUDY**

	ALTERNATIVE 1		ALTERNATIVE 2	
OBSERVATION LOUNGE	MUSIC CLUB	464,500	COMEDY CLUB	511,000
QUEEN'S LOUNGE	DINNER THEATER	482,000	DINNER THEATER	482,000
ROYAL SALON	SPORTS BAR	525,000	SPORTS BAR	520,000
WEDDING CHAPEL	MAGIC CLUB	386,000	MAGIC CLUB	381,000
PROM CAFE AND LOUNGE	RESTAURANT	603,850	RESTAURANT	603,850
CHELSEA RESTAURANT	RESTAURANT	302,000	RESTAURANT	300,000
BRITTANIA SALON	COMEDY CLUB	994,500	CARD CLUB	1,090,000
VERANDA GRILL	MUSIC AND DANCE CLUB	402,500	MUSIC AND DANCE CLUB	402,500
SUN DECK MUSEUM	MUSEUM, RENOVATE	200,000	MUSEUM, RENOVATE	200,000
SIR WINSTON ROOM	RESTAURANT	155,000	RESTAURANT	155,000
PROM DK RETAIL SHOPS	RETAIL, RENOVATE	90,000	RETAIL, RENOVATE	90,000
ENLARGE, OPTION	SIR WINSTON ROOM	150,000	SIR WINSTON ROOM	150,000
	WITH ENLARGE	4,755,350		4,885,350
	W/O ENLARGE	4,605,350		4,735,350



## ***ELECTRICAL MAINTENANCE***

<b>No.</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>Mat'l</b>	<b>Labor</b>	<b>Total</b>	<b>Remarks</b>
	<b><u>Maintenance Requirements</u></b>					
1	C/B Clean, Inspect, Test, and Torque	13	1,450	2,925	4,375	
2	Test Motor Overloads	20	1,850	3,000	4,850	
3	Test GF System	100	7,050	15,000	22,050	
4	Test Insulation (Doble)	13	2,900	3,900	6,800	
5	Test Grounding System	13	2,850	5,550	8,400	
6	Megger Cables	100	3,750	7,500	11,250	
	<b><i>TOTAL</i></b>				<b><i>\$57,725</i></b>	
	<b><u>Emergency Generator Test</u></b>					
1	Start, Load Test (2Hrs)	1	150	300	450	
	<b><i>TOTAL</i></b>				<b><i>\$450</i></b>	

**Volume III**  
**APPENDIX "B"**

*QUEEN MARY*

VESSEL ANALYSIS

SOURCE  
AND  
REFERENCES

## **APPENDIX "B"**

The following list represents publications and articles used in the preparation of this report.

ANSI A159.1-1972 Surface preparation specifications  
Steel structures painting council

CORPRP Companies, Inc.  
Corrosion investigation of the Hotel Queen Mary dated  
26 November 1989

NEC - National Electric Code

NFPA - National Fire Protection Association

OSHA - Occupational Safety and Health Administration

Port of Long Beach  
Exterior and Interior Hull Investigation Report  
dated 16 October 1991

UBC - Unified Building Codes

In addition to the above publications and articles information on specific items were obtained from the following sources:

Entertainment Cost Consultant - David Holtz

ERA - Economics Research Associates

Disney Company

**Volume III**  
**APPENDIX "C"**

*QUEEN MARY*

VESSEL ANALYSIS

DOCUMENT  
CONTROL

## APPENDIX "C"

### Document Control

The drawings aboard the vessel totaling a few thousand, include the original builders drawings and subsequent conversion and modification drawings. These drawings are spread throughout the ship with two major areas of storage. The primary storage areas ("A" Deck fwd & "F" Deck aft) are incomplete disarray and each time a drawing is needed, hours or days of searching is required.

The following is offered for the information and consideration of the reader and not listed as a work item or option. But for an item as important as ships drawings, we feel that someone should investigate the possibilities listed below.

To organize the drawings aboard the vessel, one large area should be selected and all drawings delivered to that area, a search throughout the vessel to collect all drawings not delivered to that area

Drawings are to be separated and cataloged using a computer to track each drawing. After all drawings are cataloged and the computer has sorted to some intelligent order, the drawing will be indexed and stored in that sorted order. Drawings not found should be documented.

A single space aboard the vessel should be selected to house the stored drawings with someone in charge of document control. The computer should be used to track the subsequent use of all drawings.

It may be worthwhile having an inexpensive Ozalid blueprinting machine in the area. This would allow someone to take a print of the drawing instead of the original.

The following database fields may represent the minimum information required on each drawing

- |                                     |   |
|-------------------------------------|---|
| 1. Index No.                        | Search any field to find drawing        |
| 2. Drawing No.                      | Maybe color coded sets for quick ident, |
| 3. Drawing Title                    | i.e., Blue - builders dwgs              |
| 4. Original/Print                   | Green - Conversion dwgs                 |
| 5. Building/Conversion/Modification | White - Modification dwgs               |
| 6. Drawing Revision                 |   |
| 7. In File/Checked Out              |   |
| 8. Checked Out By:                  |   |
| 9. File Location                    |   |

Amount                      \$ 100,000.00